

THE AMERICAN JOURNAL of OCCUPATIONAL THERAPY

OFFICIAL PUBLICATION OF THE AMERICAN OCCUPATIONAL THERAPY ASSOCIATION

Vol. XIII, No. 3

1959

May-June



TABLE of CONTENTS

ARTICLES

- The Gesell Developmental Schedules and the Physically
Handicapped Child 117

A. L. Ruess, Ph.D.

Anne Dally, M.A., O.T.R.

Edward F. Lis, M.D.

- The Effects of Color on the Human Organism 125

Faber Birren

- A New Prosthetic Multiple Action Shoulder Unit 130

Leonard F. Bender, M.D.

Lyla M. Spelbring, O.T.R.

Helen Barrows, O.T.R.

- Finger Exerciser 134

Robert W. Demers, O. T. R.

DIVISIONS

- | | |
|-------------------------------|------------------------------|
| Nationally Speaking 138 | Delegates Division 150 |
| Featured OT Depts. 143 | Classified Ads 154 |

FEATURES

- | | |
|------------------------------|------------------------------|
| Picture Page 136 | AOTA Committees 147 |
| Conference Highlights... 141 | Calendar of Events 150 |
| Editorial 142 | Reviews 152 |

AOTA
Conference
October 15-23

HELP US KEEP THE THINGS WORTH KEEPING



This is Commander W. R. Anderson of the Nautilus, world's first atomic-powered submarine.

Working day after day in the first line of America's defense force, he sees the need for peace first-hand—knows that it's a matter of life or death. And he knows, too, that peace doesn't come easy or cheap. Peace costs money.

Not only money for strength to keep the peace. Money for science and education to help find lasting peace. And money saved by individuals, to keep our economy sound.

We can't all be Sub Commanders. But we can all help strengthen America's Peace Power, simply by buying Bonds for a stronger, safer America. Every Bond you buy helps. Couldn't you buy a few extra?

HELP STRENGTHEN AMERICA'S PEACE POWER BUY U. S. SAVINGS BONDS

The U.S. Government does not pay for this advertising. The Treasury Department thanks The Advertising Council and this magazine for their patriotic donation.



PRESTON

EQUIPMENT FOR



● **SELFHELP DEVICES:**

Devices for one-armed knitting, embroidery and darning; Telephone Holders; Automatic Page Turners; Flatware for the Handicapped; Drinking Aids; Dressing Aids; Reachers; Bath-tub Rails and Seats; Toilet Armrests; Grab Bars of various designs; Raised Toilet Seats; Incontinent Devices.

● **AIDS FOR THE HANDICAPPED:**

Wheelchairs, custom built and standard; Com-modes; Walkers; Tilt Tables; Large selection of Crutches and Canes, including Tripod and Four-Legged Canes.

● **CEREBRAL PALSY EQUIPMENT:**

Relaxation Chairs; Runner Chairs; Cut-Out Tables; Stand-In Tables; Foot Placement Ladder; Standing Stabilizers; Straight and Reciprocal Skis; Crawler; Special Tricycles.

● **O.T. LOOMS AND KILNS:**

Herald Looms — Hotpack Kilns

● **SPEECH THERAPY:**

Audiometers; Tape Recorders; Auditory Training Units; Chromovox; Mirrors.

● **REHABILITATION EXERCISE:**

Walking Parallel Bars and Exercise Staircases; Posture Mirrors; Gymnasium Mats; Bicycle Exercisers; Restorator; Progressive Resistance Exercise Units; Quadriceps Boots; N-K Table; Guthrie-Smith Suspension Apparatus; Shoulder Wheels; Manuflex; Kanavel Table.

- Complete Line of Bunnell Hand & Finger Splints; Keystone Splint; Whirlpools; Ultrasound; Hydrocollator; Goniometers; Treatment Tables; Timers; ADL Training Boards.

Send for your free copy of our illustrated Catalog No. 1058-O

J. A. PRESTON CORPORATION

175 FIFTH AVENUE, NEW YORK 10, N. Y. ORegon 4-9044

**Everything for the
Handweaver**

**HIGH QUALITY
HANDWEAVING YARNS
AND SUPPLIES**

**COTTONS • WOOLS • HOMESPUNS
LINEN • METALLICS • CHENILLES
NOVELTY YARNS**

Looms, including Leclerc Folding Loom

Warping Frames

Bobbin racks and winders

Table reels

Tension boxes



**PROMPT
SHIPMENTS**

Send \$1.00 for complete color cards. This \$1.00 can be applied to your next order of \$10.00.

Write today for free catalog and current price list

**Order all your handweaving supplies
from the Handweaver's Headquarters**

LILY MILLS COMPANY

Dept. HWN, Shelby, N. C

The American Journal of Occupational Therapy

*The Official Publication of the
American Occupational Therapy Association*

Editorial Office: 3514 N. Oakland Ave.
Milwaukee 11, Wis.

EDITOR

Lucie Spence Murphy, O.T.R.

ASSOCIATE EDITORS

Marie Louise Franciscus, O.T.R., Lt. Col. Myra McDaniel, O.T.R.

EDITORIAL STAFF

ADVISORY COMMITTEE

Pediatrics.....	H. Kent Tenney, M.D. <i>University of Wisconsin Medical School</i>
Physical Medicine	Ben L. Boynton, M.D. <i>Northwestern University</i>
Psychiatry	Walter E. Barton, M.D. <i>Boston State Hospital</i>
Research	D. Wells Goodrich, M.D. <i>N. I. of M. H., Bethesda, Md.</i>
Tuberculosis	A. L. Banyai, M.D. <i>Chicago, Illinois</i>
Editorial	William R. Dunton, Jr., M.D. <i>Baltimore, Md.</i>

DIVISION EDITORS

Genevieve Anderson, O.T.R.	Adaline Plank, O.T.R.
A. Jean Ayres, O.T.R.	Eleanor R. Hillger, O.T.R.
Elizabeth Collins, O.T.R.	Norma Smith, O.T.R.
Eunice Ford, O.T.R.	Florence Stattel, O.T.R.
Evelyn M. Goddard, O.T.R.	Beatrice Wade, O.T.R.
Angeline Howard, O.T.R.	Carlotta Welles, O.T.R.
Eleanor Kille, O.T.R.	Wilma West, O.T.R.
Barbara Locher, O.T.R.	Minnie Witham, O.T.R.
Henrietta McNary, O.T.R.	Elizabeth Withers, O.T.R.
Martha Norris, O.T.R.	Ruth Woodring, O.T.R.
Bertha Piper, O.T.R.	

CONTRIBUTING EDITORS

Naida Ackley, O.T.R.	Marion Crampton, O.T.R.	Ruth Robinson, Col., AMSC
Robert Belyea, O.T.R.	Marjorie Fish, O.T.R.	Frances L. Shuff, O.T.R.
Lottie Blanton, Capt., AMSC	Winifred Kahmann, O.T.R.	Julie Werner, O.T.R.
Virginia Caskey, O.T.R.	Virginia Kilburn, O.T.R.	
Marianne Catterton, O.T.R.	Elizabeth Messick, O.T.R.	

AMERICAN OCCUPATIONAL THERAPY ASSOCIATION

250 West 57th Street, New York 19, N.Y.

OFFICERS: *President:* *Helen Willard, O.T.R.; *First Vice-President:* *Beatrice D. Wade, O.T.R.; *Second Vice-President:* Florence Stattel, O.T.R.; *Treasurer:* *Wilma West, O.T.R. **BOARD OF MANAGEMENT:** *Delegates:* *Ethel Huebner, O.T.R., Dwyer Dundon, O.T.R., Irene G. Robertson, O.T.R., Jeannine Dennis, O.T.R., Frances M. Thompson, O.T.R., Jacqueline Wright, O.T.R. *Elected members:* Marguerite Abbott, O.T.R., Mary Britton, O.T.R., *Ruth Brunyate, O.T.R., Gail S. Fidler, O.T.R., *Marie Louise Franciscus, O.T.R., Satoru Izutsu, O.T.R., Martha Matthews, O.T.R., Lt. Col. Myra McDaniel, O.T.R., Elizabeth Messick, O.T.R., *Laurel Nelson, O.T.R., Mary Reilly, O.T.R., June Sokolov, O.T.R., Caroline Thompson, O.T.R. *Honorary member:* William R. Dunton, Jr., M.D.

*Members of the executive committee.

EXECUTIVE DIRECTOR: Marjorie Fish, O.T.R., 250 West 57th Street, New York 19, N. Y.

Correspondence relating to editorial matters should be sent to *The American Journal of Occupational Therapy*, 3514 N. Oakland Ave., Milwaukee 11, Wis. Only original contributions should be submitted for publication in the Journal and if accepted, may not be published elsewhere without permission.

Opinions and statements expressed in the magazine are those of the authors of articles and are not to be considered as representing the views of the American Occupational Therapy Association.

Manuscripts should be typewritten, double spaced, with liberal margins and submitted in duplicate. References should be listed at the end of the article and not as footnotes.

Illustrations may be included. Photographs should be glossy prints 3" x 5" or larger. Drawings must be drawn and lettered in India ink on heavy paper.

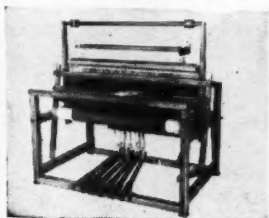
Correspondence relating to subscriptions should be sent to the American Occupational Therapy Association, 250 West 57th Street, New York 19, N. Y. Change of address notices should include the old as well as the new address, postal zone, and should be mailed six weeks in advance of publication date.

The Journal is published bimonthly on the 10th of February, April, June, August, October and December.

Subscription price to members included in yearly fees; to non-members \$6.00 a year domestic, \$6.50 foreign. Single issues, \$1.25.

Correspondence relating to advertising should be sent to the editorial office. Classified advertising accepted only for job opportunities or positions wanted.

Entered as second class matter at Post Office, Milwaukee, Wisconsin, under the act of March 3, 1879.



Weaving Looms Recommended for Therapy

Expertly designed to simplify operations, LECLERC looms provide a beneficial relaxation of body and mind through smooth, regular exercises. Models of various sizes.

Free catalogue
on request.

Nilus
Leclerc



INC.

L'ISLETVILLE, NO. 21,
QUEBEC, CANADA

Want to **SAVE** on quality **KNITTING YARNS?**



Whether you are a therapist who needs just one hank of yarn . . . or a hospital asking for bids on a year's supply . . . you will find splendid savings in our "Wonoco" and "Fox" brand yarns . . . now **permanently mothproofed!**

Since 1923, we have passed on the savings effected by our huge volume-operation as converters of knitting yarns.

Today, in our new 4-story building, we offer all regular yarns, blends, the latest fashion yarns, latest colors . . . and the finest service.

Bell yarns are used by Veterans Administration

SEE for YOURSELF

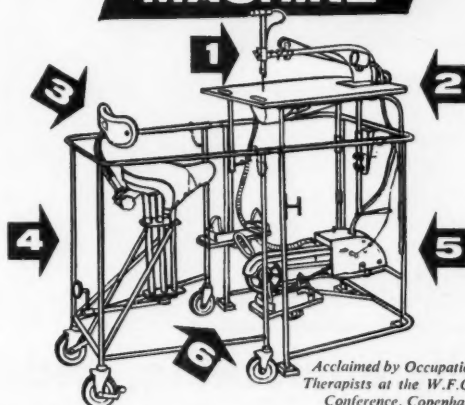
- Write for Price List and Color Card with over 500 actual samples
- Place us on your bidding list
- **SPECIAL PRICES ON QUANTITY ORDERS**

BELL YARN CO.

New York's Largest Distributors
of Art Needlework Supplies

Dept. T—75 Essex Street, New York 2

The 'OLIVER' REHABILITATION MACHINE



Acclaimed by Occupational
Therapists at the W.F.O.T.
Conference, Copenhagen.

- 1 Easily-changed working-head for sawing, drilling, grinding, buffing, polishing, etc.
- 2 Large surface Work Table. Raises and lowers 12".
- 3 Adjustable backrest. Seat raised and lowered by easily-operated jack.
- 4 Seat Cradle / Walking Frame/ Wheel Chair, etc., on swivel ball-bearing wheels.
- 5 Calibrated adjustable brake attachment. 3 speed gearbox.
- 6 Adjustable pedal cranks and foot boards.

Send for comprehensive illustrated brochure from the Sole Distributors who are noted suppliers of Art, Craft and Needlework Tools, Materials and Equipment.

NOTTINGHAM HANDCRAFT COMPANY
Edwalton Hill, Melton Road, West Bridgford, Nottingham, England

COLORS • LINKBELTS • METAL ENAMELING
ARTISTS • CRAFTSTRIP • METAL CRAFT
• CRAFT BOOK • WOODEN BOXES
SUPPLIES • BLOCK PRINTING
CRAFT • WOODEN PLATES
ARTISTS SUPPLIES
CRAFT • CHIP CARVING
TEXTILE COLORS
GLASS ETCHING
LEATHERCRAFT

FREE
CATALOGUE
ON REQUEST

GAGER'S
HANDICRAFT
1024 NICOLETT AVE.
MINNEAPOLIS 3, MINNESOTA
Federal 5-6757

NEW! TOMAC ALL-PURPOSE TABLE



Fully adjustable, folds flat for storage...made of lightweight aluminum, durable Formica top

Ideal utility table, especially suited for wheel chair use. Height and tilt adjustments are quickly and easily made by spring buttons. Tilts 12°. Retractable bookrest. Folds to 4-inch width for convenient storage. Heavy-duty frame and legs made of 1-inch aluminum tubing. Formica top, 18 x 30 inches, in pastel linen finish. Height adjusts from 29 to 33 inches.

No. 5225—Tomic All-Purpose Table....Each \$24.75
Lots of 6, each **\$22.90**

For information on the complete line, please contact our representative, or write...

Other tables, similar to the new Tomic All-Purpose Table, are available. These tables are non-adjustable in height and tilt, and without bookrests. Gray Formica tops.

No. 5226—Folding Utility Table
16" x 23½" x 30" high.....Each **\$15.00**
No. 5226A—Folding Wheel Chair Table
18" x 30" x 31" high.....Each **\$19.95**
No. 5227—Folding End Table
16" x 19" x 25" high.....Each **\$12.50**



Rehabilitation Products

A Division of American Hospital Supply Corporation

2020 Ridge Avenue, Evanston, Illinois

ATLANTA • CHICAGO • COLUMBUS • DALLAS • KANSAS CITY
LOS ANGELES • MINNEAPOLIS • NEW YORK • SAN FRANCISCO • WASHINGTON

THE AMERICAN JOURNAL of OCCUPATIONAL THERAPY

Official Publication of the American Occupational Therapy Association

Vol. XIII, No. 3

1959

May-June

THE GESELL DEVELOPMENTAL SCHEDULES AND THE PHYSICALLY HANDICAPPED CHILD*

A. L. RUESS, Ph.D.
ANNE DALLY, M.A., O.T.R.
EDWARD F. LIS, M.D.

The theory of development which emphasizes the sequence of maturation in the process of growth has become virtually synonymous with the name of Arnold Gesell and his associates. There is little disagreement that Gesell has been a prime mover in initiating the wide range of interest concerning the development of the infant and pre-school child. His influence has probably been greater than that of any other single individual during the first half of this century. Of the various scales, techniques, norms and methods used to evaluate the child under five years of age, the Gesell Developmental Schedules are probably the most widely used, at least in the United States. With the recent and increasing interest that has evolved around the problems of the handicapped child the Gesell armamentarium is utilized frequently for evaluating various aspects of the problems that these children present. The major objectives of this paper are to review briefly the basic theory and principles of Gesell, to discuss some of the pertinent empirical findings and critical comments relevant to an understanding and use of the Schedules, and to present what we consider to be the major functions of the Schedules in the overall process of habilitating the handicapped child.

It is well to keep in mind that the field of child development, like many other disciplines, is beset by problems of terminology. For Gesell, the terms growth, development and maturation are essentially interchangeable. Whereas Watson and Lowrey give rather definite and different meaning to the terms, growth and development: "Development implies an increase in complexity, differentiation, and function as opposed to growth, meaning an increase in size."¹⁰ Ausubel¹ discuss-

es in some detail, historical and contemporary aspects of these concepts and provides an interpretation of these terms which includes differentiating the concepts maturation, development, growth, learning and readiness. Since this paper is concerned with the Gesell Development Schedules, the Gesell terminology and theory is used. However, this should, in no way, be taken to imply an attempt to deemphasize the important contributions found in other points of view presented in the wide array of literature on the subject of child development.

THEORY AND PRINCIPLES OF THE MATURATIONAL SEQUENCE

Gesell's conception of development contains what may be called the neurological bias, inasmuch as development is stated to be controlled overwhelmingly by endogenous factors. The emphasis on the internal *mechanisms* that regulate growth, in the following statement describing the second edition of Gesell's *Development Diagnosis*, stresses this point concisely: "It presents the behavior aspects of developmental maturity from an objective standpoint, comparable to that of clinical neurology. It is the maturity and organization of the neuromotor system with which we are chiefly concerned. We are, in fact, dealing with developmental neurology."¹⁰ Human development has its beginnings at conception. Moreover, the sequence of maturation is universal for the human species. Environmental factors are not ignored. They are an integral part of the global concept of development. Thus

*Center for Handicapped Children, University of Illinois Research and Educational Hospitals and Departments of Psychiatry, Occupational Therapy, and Pediatrics.

"... basic configurations, correlations, and successions of behavior patterns are determined by a process of maturation."¹¹ This process is most prominent during the pre-natal and infancy periods, but continues until growth in the organism has subsided. Through detailed study and empirical analysis, norms for the behavioral manifestations of maturation for the normal infant have been established. Their sequence and time of appearance are embodied in the Gesell Schedules.

Essential to an understanding of the maturational process are the six principles governing the process of growth. First is the principle of motor priority and fore-reference, which states in essence that all behavior has original motor components and aspects; this applies, for example, in vision, speech, thought and emotions. Second is the principle of developmental direction which is concerned with the differentiation of functions along various axes of the body. There are three major trends or sub-principles here: the cephalo-caudal trend, i.e., overall sequential development from head to foot; the proximal-distal trend, i.e., sequential development from axial to appendicular musculature; and in the hand, the ulnar-radial trend, i.e., the sequential development from little finger to index finger and thumb. Other directional trends are present in grasping and manipulation.

The third principle, reciprocal interweaving, is so inclusive of the multi-functional and inter-dependent systems of the human organism that it has been stated as a law:

The organization of reciprocal relationships between two growing counterpoised functions (such as flexion vs. extension) is evidenced, ontogenetically, by successive shifts in the ascendancy of one function over the other, with progressive integration and modulation of the resultant behavior patterns.¹⁰

Because of the pervasiveness of this principle, it is not confined to gross motor behavior. It involves a complex of factors and processes in the excitation and inhibition of biochemical, physiological and behavioral responses. Throughout the interweaving development of the myriad, complex, antagonistic elements a wider range of reciprocal growth occurs, thus bringing steadily into existence a greater variety of, and potentiality for, differential behavior as the child progresses along the time continuum.

Fourth is the principle of functional asymmetry. This principle is related to the bilateral structure of man and finds expression in such phenomena as the functional dominance of handedness and eyedness that is gradually established in the organism. The fifth principle is self regulation. Most of the self regulatory mechanisms are inherent in the infant and control the processes of sleeping and waking, eating, play, periods

of rapid growth and plateaus, to name some of the obvious ones. Consolidation of earlier developmental processes enables the organism to move to higher and more complex levels. Routines disappear and new ones emerge, others increase their breadth and quality of function. With changes in the level of maturity, the patterns of behavior change. Basically, there is a fundamental and progressive change in the regulation of the conservation, distribution and discharge of energy. The sixth principle, optimal realization, resides in man as the end product of evolution and concerns the tendency of the organism to compensate, to adjust in the face of destruction, or loss, of any parts, and the tendency toward realizing a maximum potential.

Although these principles may be applicable to the human species as a whole, the endless, limitless variations found in individuals render maturation a unique matter. Genetic similarities and patterns observable in traits and behaviors within families and the differences among non-familial individuals provide concrete evidence of the theoretical possibilities of infinite variations among the species. Nor can the opportunistic and capricious nature of infants and children be ignored in grasping a complete understanding of individuation. It is against this background of individual differences and variations that the sequence of maturation must be viewed.

During the course of maturation, there are chronological guide posts that delineate characteristic age periods which provide a broad frame of reference for a panoramic and sequential view of development. Gesell has summarized them in his characteristically terse and impressive style, as follows:

In the *first quarter* of the first year, the infant gains control of twelve tiny muscles which move his eyes.

In the *second quarter* (16-28 weeks) he comes into command of the muscles which support his head and move his arms. He reaches out for things.

In the *third quarter* (28-40 weeks) he gains command of his trunk and hands. He sits. He grasps, transfers and manipulates objects.

In the *fourth quarter* (40-52 weeks) he extends command to his legs and feet; to his forefinger and thumb. He pokes and plucks; he stands upright.

In the *second year*, he walks and runs; articulates words and phrases; acquires bowel and bladder control; attains a rudimentary sense of personal identity and of personal possession.

In the *third year*, he speaks in sentences, using words as tools of thought; he shows a positive propensity to understand his environment and to comply with cultural demands. He is no longer a "mere" infant.

In the *fourth year*, he asks innumerable questions, perceives analogies, displays an active tendency to conceptualize and generalize. He is nearly self-dependent in routines of home life.

At *five*, he is well matured in motor control. He hops and skips. He talks without infantile articulations. He can narrate a long tale. He prefers associative

play; he feels socialized pride in clothes and accomplishment. He is a self-assured, conforming citizen in his small world.

The psychological growth which is achieved in the first five years of life is prodigious. Both in scope and speed, the transformation of the pre-school years exceed those of any other half decade.⁷

It should be noted that the ages which delimit each period are, in the Developmental Schedules, the *Key Ages*: 4, 16, 28, 40, and 52 weeks, and 18, 24, 36, 48, and 60 months. The theory, principles, and behavioral characteristics presented in this section are at best only the essential elements of Gesell's maturational concept of sequential development. Intimate acquaintance with the basic references^{7,9,10,11} is a prerequisite for a fundamental understanding of the growth process and is surely one of the necessities for skillful application and interpretation of the Gesell Schedules.

THE DEVELOPMENTAL SCHEDULES

Three major indices are available for appraising developmental status: anatomical, physiological and behavioral. The Gesell Schedules concern themselves with the evaluation of behavior, which is no doubt the most sensitive of the indices. However, the relationships of these indices, one upon the other, is by no means mutually exclusive.

The first Schedules appeared in 1925⁶ and presented norms for appraising development between the ages of four weeks and fifty-six weeks. The norms were established at four week intervals. Fifteen years later, a second Schedule appeared,⁷ sometimes referred to as the Pre-school Schedule, beginning at the fifteenth month and ending at six years. Norms for the second Schedule were given at 15, 18, 21, 24, 30, 36, 42, 48, 54, 60, and 72 months. A volume that appeared in 1941⁸ combined both Schedules. The second edition of this text was published in 1947 and presently constitutes the "basic manual" for users of the Schedules. Four areas of behavior are appraised: motor, adaptive, language and personal-social.

Professional reactions to the Schedules have varied. Psychologists have probably been the severest critics. Freeman⁴ has called attention to a lack of adequate standardization in terms of norms, reliability and validity. The population on whom the norms were established has been criticized because of its small size and limited social-class homogeneity. Stolz,¹⁸ in addition to raising the question of standardization, questioned the prognostic value of the Schedules. Geber, on the other hand, states that the Schedules constitute "... a sensitive and precise instrument for deep and subtle research ..."⁵ Jackson,¹³ from the Yale Child Study Center, believes that some of the norms are questionable, indicating that in-

fant have probably advanced in recent years above these norms as a result of increased pediatric care, greater parental attention and stimulation, and other cultural variations favorable to fostering a faster rate of development. The difficulties of predicting later status from an appraisal of early behavior has been rather well studied over the past twenty-five years. As a general rule, it can be stated that the younger the child at the time of examination, the less significant will be the correlation with later examination results, i.e., the correlation is a function of the time interval between the examinations. Hence, children examined at one year and later at four years on the Schedules, will show less consistency in their relative status than children examined at one year intervals.

The foregoing comments apply to the "normal" child and are even more relevant applied to the handicapped child. Development can be affected in many gross and subtle ways, both quantitatively and qualitatively, depending on the nature and degree of the handicap. Gesell has presented a detailed discussion for interpreting the results of the Schedules relative to various kinds of deviant development.⁹ It must be submitted, however, that the results of a developmental appraisal, for both the normal and the handicapped child, tell us only the relative position of the child *at the time of examination* in relation to the developmental expectancies on the Gesell Schedules for the normal child. This point is especially crucial in regard to the handicapped child since the presence of impairment makes prediction more hazardous than in the case of the normal child, without repeated examinations to establish the rate of development in each individual case. Impairment that would obviously be expected to depress certain behavioral functions may affect development quite noticeably in other areas also. For example, it can be anticipated, *a priori*, that the blind child will show behavioral deficiencies specifically related to the visual modality. But, their world is undoubtedly different from that of the sighted child. They show a high dependence on auditory and tactile impressions for adaptive behavior. Motor behavior, especially in standing and ambulation, is often seriously retarded during the second and third years due to the inability to develop visual space references essential to ambulation; yet language may be highly developed, thus indicating a good intellectual development and potential important for a program of therapy. The deaf child often shows developmental lags in adaptive and personal-social behavior. He is highly dependent upon visual cues, and whereas the blind child can anticipate a consistency in

the use of verbal language unique to the broader social sphere, the deaf child has less assurance that pantomime, gestures and facial expressions carry the same meanings and connotations outside of his immediate family setting. Children with neuro-muscular anomalies, such as cerebral palsy, show a wide variety of developmental problems. Many of them have varying degrees of impairment in one or more of the sensory modalities, and without some clarification and understanding of their sensory status, the results of a developmental diagnosis may be grossly misleading. Children generically classified as having "minimal diffuse brain damage", with or without the more common symptoms of central nervous system impairment, often present special problems in examination. Bradley³ has listed the primary behavioral symptoms as unpredictable variation in behavior, hyperactivity, distractibility, impulsiveness, irritability and difficulties in abstract thinking. Because of the possibility of wide fluctuation in the behavior of these children from time to time, there may often be doubt as to whether the examination behavior is a typical sample and whether the examiner has elicited behavior indicative of the highest developmental level of which the child is capable. The now-classical studies of Spitz¹⁷ and Goldfarb¹² have demonstrated the effects of environmental deprivation on the maturation of children with apparent normal endowment. Cleft palate children often show delayed speech and language development. Enumeration of the foregoing handicaps is by no means exhaustive of the possibilities. The important point is an awareness of the fact that a handicap can affect, often to an unknown and unpredictable degree, the child's behavior at any age. It is imperative, therefore, to evaluate whether the rate of development is temporary or permanent. This is especially relevant with children having mild and moderate degrees of handicap.

As a clinical instrument for evaluating behavior, the Gesell Schedules have the same underlying assumption as do other behavioral, clinical techniques. The most important one to consider here is that the examinee has had the same opportunities to become familiar with the behavioral items of the Schedule as the subjects on whom the norms were established. With handicapped children, this assumption cannot always be met. Their condition may have excluded the possibility of having the relevant experiences. A second assumption is that the sample of behavior secured during the examination is representative of the child's repertoire of behavior. A tense, reticent, non-cooperative, two-year-old will probably function at a lower level than

that of which he is capable. The presence of tenseness, etc., may be due to fatigue, hunger, previous unhappy associations with the examining milieu, inability of the examiner to establish rapport or relax the child, and other factors that the examiner should evaluate. With some children, more than one examination is necessary to elicit an adequate sample of behavior. There are other assumptions, the presentation of which are beyond the level of discussion presented here. Many of Rappaport's assumptions¹⁶ in regard to intelligence testing are quite apropos to the Schedules. There is a fundamental relationship between intelligence tests and the Gesell Schedules in that both evaluate behavior from which inferences are made. Bayley's recent paper² can be read with profit in regard to infant testing. Especially relevant are her comments concerning the various behaviors that occur at different ages. One factor analysis of the Berkeley Growth Study, for example, revealed three discrete types of intellectual functions that have their highest loadings at approximately eight months (sensory-motor), thirty months (persistence or goal-directed behaviors), and four years (general intelligence). The implications are that any attempt to correlate behavioral development with *intelligence* before the age of four years possesses little or no validity.

A final comment about the Schedules. All of the items administered are scored plus or minus depending upon the appropriateness of the responses. To determine a child's level of development in each of the four behavioral areas, the place is found where the total number of minus signs exceeds the total number of plus signs. If the signs are irregularly distributed, a zone of development is established. This procedure enables the examiner to arrive at a quantitative estimate of development. For the handicapped child, and often the normal child, a qualitative analysis of behavior is essential. No specific rules can be put forth for this type of analysis. An examiner must depend upon his knowledge and understanding of child development, experience with a wide variety of normal and handicapped children, the effects of certain kinds of handicapping conditions on behavior, and the extent of his clinical acumen. The experienced examiner is well aware of the importance of the qualitative aspects. Consider, for example, two children of the same chronological age. Speech is present in one and absent in the other. The former, who uses words and sentences inconsistently and inappropriately, is showing a less advanced and less well integrated behavior than the latter who uses facial expressions, gestures and pantomime consistently and meaningfully

and who, consequently, may be communicating at a higher functional level. The behavior may be prognostically significant, indicating mental retardation in the former and a good potential for adaptive and intellectual growth in the latter.

PREREQUISITES FOR COMPETENT USE AND INTERPRETATION OF THE SCHEDULES

A wide variety of persons, with diverse professional training and experience, are apparently engaged at the present time in using the Schedules. The majority includes pediatricians, psychiatrists, neurologists, psychologists, general medical practitioners and occupational therapists, as well as other auxiliary medical personnel. To our knowledge, no explicit presentation of training and experience has ever been given in the literature in recent years regarding what may be considered minimal prerequisites for competent administration and interpretation of the Schedules. Gesell has the following to say:

As a clinical technique, developmental examinations may be undertaken at various levels of skill and thoroughness. As a diagnostic specialty, this technique requires postgraduate training and a diversified clinical experience with normal, atypical, and defective infants and young children.¹⁰

More recently, Provence has stated:

The developmental evaluation of children with sensory handicaps, such as deafness and blindness; motor handicaps, such as cerebral palsy; or social handicaps, such as inadequate or improper environmental stimulation, is difficult and requires special competence.¹⁵

Both of the foregoing statements are directed to the practitioner of clinical medicine, especially the pediatrician. What about those with non-medical training? We cannot be so presumptuous as to give a definite answer for all professional groups legitimately using the techniques of developmental appraisal. However, on the basis of our experiences with many children possessing a wide variety of handicaps, we would suggest that the following be considered as a minimum for competent utilization of the Schedules: a professional degree (or within a year's completion of one) a year of full-time clinical experience with normal and handicapped children of all ages, administration of the Schedules and interpretation of the results under experienced supervision, a basic knowledge of the theory and problems of child development, the effects of handicapping conditions on growth and development, and an adequate understanding of testing and assessment procedures at the theoretical and practical levels. We see no objections to making developmental appraisals at "various levels of skill and thoroughness," providing the results are identified appropriately in this regard and are integrated with medical data, developmental history, and other relevant informa-

tion that is necessary for a thorough understanding of the problem under consideration. There is no justification, because of incompetent use of the Schedules, for denying a child treatment and/or further diagnostic evaluation, labelling him erroneously, or dissipating professional care and services.

MAJOR FUNCTIONS OF THE DEVELOPMENTAL SCHEDULES WITH HANDICAPPED CHILDREN

In spite of some of the limitations of the Schedules, we feel that they play an important role in the total habilitative process of the handicapped child. First is the problem of establishing the approximate level of functioning in each of the behavioral areas so as to provide a point of departure for initiating treatment. That is, before a program of treatment can be started, it is necessary to analyze (diagnose) the nature and degree of the child's impairment. (There are, of course, in any comprehensive program of habilitation, many other diagnostic techniques, medical, psychological and social, brought to focus on the child to illuminate the problem and which will often establish, in addition, the etiology). Once the total diagnosis has been made and the level of behavioral functioning established, it is possible to begin the next step: treatment. Thus, knowing the cause and extent of the developmental arrest and knowing the normal sequence of developmental behavior, the type of treatment can be delimited. For example, a 30-month-old child with a neuromuscular anomaly who shows an 18-month level of motor development and an approximate 30-month level of development in the other behavioral areas, might best be helped by a program of occupational and physical therapies directed toward developing motor behaviors expected at an 18 to 24 month level. For the child with impairment in more than one developmental area, treatment may consist of attempting to involve several areas simultaneously. Where there are multiple handicaps, it may be necessary to establish priorities relative to the various handicapping conditions. Essentially then, the Schedules are a valuable diagnostic technique in locating the level of development and in providing guides indicating the direction toward which treatment might best be directed.

After the level of functioning has been established and treatment has been administered for a period of time, it is usually necessary to evaluate its effects. Assuming that effective treatment will be manifested in behavioral changes, re-examination on the Gesell Schedules provides some degree of objective measurement for assessing the quantity and quality of change. To be

sure, all positive changes on the Schedules, following treatment, cannot be attributed solely to the effects of therapy. The changes, to some degree, may be due to development that would have resulted without benefit of therapy, or they may be due to errors of evaluation on the Schedules during the pre-therapy examination, post-therapy examination, deterioration of the patient, or a varying combination of all three factors. Repeated evaluations on the Schedules, at not less than four to six month intervals, help to minimize the subjective elements involved in making a clinical judgment of the effects of treatment on behavior, i.e., on motor, language, adaptive and personal-social behavior.

Closely allied to the function of determining the efficacy of treatment is the problem of attempting to establish a pattern of the rate of development. Actually both of these problems can often be handled simultaneously whenever more than one examination on the Schedules is made. To generalize, the greater the number of examinations given at different intervals along the time continuum, the more accurate will the assessment of developmental rate tend to be. It is at times essential to know the rate of a child's development in order to anticipate the emergence of certain behaviors. Knowledge of the developmental rate enables the habilitation team to plan more sensitively. Some children with diffuse central nervous system involvement show retarded development in all growth dimensions. The child with an immature, or damaged nervous system, who shows an overall growth rate of 50 per cent of normal, may not be expected to reach the first stages of walking until somewhere in the vicinity of 24 months. Treatment designed to encourage the emergence of the "walking stage" at 18 months may prove futile for probably the same reasons that attempting to "teach" the normal child to ambulate at six months will likewise prove futile. Moreover, in both cases, it is highly possible that emotional and behavioral problems will arise as a "side effect." Just as the normal child shows individual temporal variations of behavioral sequences, the same is true of the handicapped child. Development in any case is never a smooth flowing tide of phenomena, as theory alone might lead one to believe. Nor should it be expected that there is any one-to-one relationship between the kind of handicap and the rate of development of the myriad growth coordinates.

If there is any one philosophic principle that might be considered basic to an understanding and analysis of children's growth, we concur that one can probably do no better, nor worse, than to paraphrase Kluckhohn and Murray's¹⁴ terse

comment concerning the determinants of personality formation:

Every child is in certain respects: (a) like all other children, (b) like some other children, (c) like no other child.

ILLUSTRATIVE CASE MATERIAL*

Theory and practice are like asymptotes, in that, although they tend toward closer approximation, there is rarely complete coincidence. In an attempt to clarify the correspondence between the theory and practice of the points of view presented above, two case studies are presented:

Case 1 (H.R.): This 23 month old male child was initially evaluated on the Gesell Schedules as part of a total diagnostic evaluation. Referral was made by the family physician because of developmental retardation. Significant aspects of the case history indicated a seven months gestation, birth weight three pounds, eleven ounces. Jaundice occurred twenty-four hours after delivery, which was by breech presentation. X-rays and head measurements suggested arrested hydrocephalus. A deformed chest was present. The child was hypotonic, had arrested neuromuscular development, and a low vital capacity. In spite of the multiple handicaps, the child was alert, related to people well and responded appropriately and consistently to auditory and visual stimuli within the limits imposed by his physical condition.

Behavioral areas investigated included motor, adaptive, and language. The personal-social aspects were not investigated at this time because of the apparent fatigue noted in the child as the observations were recorded. The developmental summary of this evaluation read as follows:

In physical performance, this child falls below the six month level according to the Gesell Scales. Adaptive and language performance today indicate an 18 and 17 month level of development respectively, which are more consistent with the chronological age expectations.

The interview with the mother regarding the child's daily activities and developmental status, indicated a probability that lack of experience due to insufficient stimulation, as well as due to physical limitations, were important factors in restricting progress in the adaptive and language areas. Evaluation by the speech pathologist and the psychologist correlated well with the Gesell Schedule findings. No gross physiological hazards to further speech development were revealed, and potential for intellectual development was good, contingent upon progress in motor development. Ophthalmological findings were negative.

The above, summarized, initial evaluation served to define the point at which therapy

*The development appraisals on the Gesell Schedules cited in this section were made by Anne Dally, M.A., O.T.R.

should logically start. In addition, it gave the therapists and staff clues as to the approach best suited for this child. For example, the fact that adaptive and language performances far surpassed the motor development, offered a channel through which physical exercise could be attained, i. e., through adaptive play, as well as denoting at what level the child was able to comprehend spoken language. To clarify these functions of the developmental assessment, the following summary of the home program is presented. This program, also, provided part of the frame of reference against which future development could be evaluated.

Play exercises emphasizing head control and trunk and girdle strengthening were devised relative to what the evaluation had revealed regarding the motor and adaptive areas. Suggestions for speech stimulation were made, such as picture matching, reading to the child, and "naming" games, including objects with which the child had daily contact. The play-type exercises were initiated from the prone position in accordance with level of motor development, and included such activities as pushing a ball to the mother from this position, necessitating extension of the neck and use of shoulder girdle muscles. The mother was also instructed in placing the child in "tailor" sitting for brief periods simultaneous with other activities.

Three months later, the initial developmental evaluation served as a baseline for evaluating progress. Although a complete developmental appraisal was not done at this time, gains were compared with earlier performances on specific items which appear on the Schedules. Comparison of three items give an indication of the changes in status:

<i>Initial Evaluation</i>	<i>Three Months Later</i>
Unable to sit alone	Sits alone for as long as
Vocabulary 4-6 words	one hour
(does not use phrases)	Uses phrases, e.g., "put in
No standing, even with support	da box"
	Stands momentarily with support

The home program was continued with revisions based upon the reevaluated behavior. Ten months following the initial evaluation, a complete developmental appraisal was repeated on the Schedules. At this time some regression in motor behavior was observed and confirmed by the mother's report.

The child had had the "flu" for almost a month prior to the visit, with subsequent regression in motor performance. Summary of the appraisal was:

In the adaptive and language areas, the child performed at a 30 to 36 month level. In view of the 33 month chronological age at this time, the child not only has caught up in these two areas, but has maintained a "normal" rate of development. The personal-social areas lag in those behaviors requiring more than a six month level of motor performance; how-

ever, development in this area is not consistent especially since the attainment of sitting for short periods has made possible the release of the upper extremities for eating with a spoon and drinking from a cup. The regression in motor performance is most dramatic in the decrease of time during which the child is able to sit tailor fashion and the loss of ability to stand momentarily with support.

These data and excerpts illustrate the function of the developmental appraisal, not only as a point of departure for initiating therapy, but also as a basis for further evaluation in regard to the efficacy of the therapeutic procedures as well as providing a method for analyzing the relationships between the developmental areas. At times such an analysis of relationships between the developmental areas will reveal that a home program is not feasible or that the child is a poor candidate for any specific therapy. In such cases it seems best indicated that counselling of the parents be instituted in the general management of the child regarding appropriate activities for stimulating and enhancing the overall development of the child. This approach was utilized in the following case where the developmental assessment was instrumental in prognosticating the rate of development.

Case II (W.D.): This 38 month old female was first seen at our Center for diagnostic evaluation and treatment planning. Prior to the initial referral, the child had received occupational and physical therapies for a period of several months with no favorable response. With the exception of a breech presentation, pregnancy, delivery and post-natal periods were uneventful. Weight and general physical condition at time of birth were revealed to be normal. Extensive laboratory workup revealed no significant findings. Diagnostic evaluations in pediatrics, neurology, orthopedics, psychology and other consultations were unable to provide a differential diagnosis other than "developmental retardation." No etiology could be established. Compositely, she presented a picture of a rather pretty child, able to stand with support, occasionally drooled, was extremely passive, but showed exaggerated total body responses to sharp auditory stimuli and often to visual stimuli presented within her field of vision.

The initial developmental assessment, based on the Schedules, indicated severe retardation in all developmental areas. Chronological age, at the time of evaluation, was 38 months, while the highest level of performance was in the motor areas at between 40 and 52 weeks. Adaptively the child was at a lower level, 32 weeks and below, and social development was the lowest of the four areas, no behavior was observed

or reported above the 28 week level. Language development was approximately at a 40 week level.

In order to gain a clearer understanding of the rate and pattern of this child's growth, the developmental history was reviewed in detail. Also, the mother's "baby book" and dated photographs were utilized in formulating the following partial analysis.

	W.D.'s Development	Gesell's Norms
Rolling over	17 months	24 weeks
Sitting without support	18 months	32 weeks
Started noticing objects	26 months	12-16 weeks
Creeping	32 months	40 weeks
Standing with support	34 months	36 weeks

A portion of the summary of the analysis reads: According to Gesell, the "normal" child goes from the ability to sit to the ability to creep in approximately eight weeks. It took this child fourteen months to show this development. This comparison indicates that if the present rate of maturation continues, it will probably be a year before the child walks independently.

Thirteen months later, when the child was seen for a periodic review and checkup, the following was written:

The mother reports that the child is taking a few independent steps. W.D. is now finger feeding and can drink from a cup without spilling. She is beginning to cooperate in dressing (52 weeks level of development) . . . The child's measured and observed improvement has been minimal. There have been some gains in social responses, but these do not exceed the 36 week level of development.

In the case of W. D., we were able to predict from the information received on the Gesell Schedules and other data, the approximate time of independent walking. Predictions in other areas of development were not made with the same degree of accuracy; however, since all areas were not showing the same degree of maturation, we did not anticipate the same rate as in independent walking. It is not uncommon, depending on the nature of the impairment, to observe wide variations in development between the four behavioral areas in the physically handicapped child.

No specific therapy was indicated for this child. The parents were instructed in the general management of the child and in providing optimum stimulation essential to this child's development. They were counselled specifically in regard to the amount of individual attention, time and effort that could best be invested in relation to enhancing growth. It has been our experience that the parents of handicapped children often spend a disproportionate amount of time in "training" their child with the objective and hope of overcoming the child's deficiencies. In many cases this often results, over a period of time, in establishing a feeling of frustration and pessimism on the part of the parents, frustrations and the development of negativisms on the part

of the child, neglect of the other children in the family often with adverse effects on their personality development, and many other deleterious effects on the family constellation. The essential point to be made is that whatever therapy is offered, whether it be counselling, surgery, clinical therapy, a program of home therapy under professional supervision, chemotherapy, etc., it should be done with consideration to the family unit, the kinds of personalities involved within it, as well as the existing social, economic, and physical circumstances. It is this basic unit—the family—that constitutes a major frame of reference relative to long-term planning for the handicapped child.

SUMMARY

Diagnosis, treatment and care of the physically handicapped child has become an area of increasing interest in recent years. One technique used in the habilitative process with these children is the Gesell Development Schedules. Gesell's theory and principle of maturation were briefly reviewed. A short, overall description of the schedule was presented, followed by some critical comments—pro and con—regarding the Schedules. There are certain prerequisites considered essential for competent administration and interpretation of them. It has been the experience of the staff at the Center for Handicapped Children, University of Illinois Research and Educational Hospitals, that there are three major functions of the Developmental Schedules applicable to physically handicapped children. Excerpts from the records of two children were presented in order to illustrate these functions.

BIBLIOGRAPHY

1. Ausubel, D. P. *Theory and Problems of Child Development*. New York: Grune and Stratton, 1958.
2. Bayley, N. "Value and Limitations of Infant Testing." *Children*, 5, 4, 1958, pp. 129-133.
3. Bradley C. "Characteristics and Management of Children with Behavior Problems Associated with Organic Brain Damage." *Pediatrics Clinics of North America*, Nov. 1957, pp. 1049-1060.
4. Freeman, F. *Theory and Practice of Psychological Testing*, rev. ed. New York: Henry Holt and Co., (See Chapter 9: "Scales for Infants and Preschool Children").
5. Geber, M. "The Observation of Quality and Quantity in the Psychological Testing of Infants." *Mental Health and Infant Development*, Vol. I, edited by Soddy, K. New York: Basic Books, Inc., 1956, pp. 273-282.
6. Gesell, A. *The Mental Growth of the Preschool Child*. New York: Macmillan, 1925.
7. Gesell, A., et al. *The First Five Years of Life: A Guide to the Study of the Preschool Child*. New York: Harper and Brothers, 1940.
8. Gesell, A. and Amatruda, C. S. *Developmental Diagnosis: Normal and Abnormal Child Development*. New York: Hoeber, 1941.
9. Gesell, A. and Amatruda, C. S. *Developmental Diagnosis: Normal and Abnormal Child Development, Clinical Methods and Pediatric Applications*, 2nd edition. New York: Hoeber, 1947.

(Continued on page 135)

THE EFFECTS OF COLOR ON THE HUMAN ORGANISM

FABER BIRREN*

A few years ago this Journal published an article by the writer entitled "The Emotional Significance of Color Preference."¹ This aroused much comment and led to correspondence with occupational therapists, psychologists, psychiatrists and medical specialists in many parts of the world.

The subject of color naturally holds a lot of human interest. Because it is so largely in the emotional realm, however, the literature on the subject varies from a great abundance of pure fantasy to few and scattered research studies which might be accepted as valid.

In the former story the writer, after a number of years of study, observation and perusal of medical publications, set forth as much as he could gather together on the psychological and psychotherapeutic aspects of color. He has since then kept up his inquiries, devoting more attention to things physiological and psychophysiological and meanwhile undertaking various practical studies of his own. Hence this present and more recent report and summary.

GENERAL ATTITUDES TOWARD COLOR

The medical profession, and with good reason, has always cast a suspicious eye on any claims for therapy in color. In the general "gestalt" of seeing, it is most difficult to isolate psychic factors from physical or physiological ones. If you or I (or a puppy) respond gleefully to a sunny day, the same response cannot be claimed for everyone else. Red, which may appeal to you, may be rejected by another. And because practically all color experience is likely to be qualified and judged in personal terms, sound and objective data are not easy to gather.

Thus some researchers will report positive results, while others will report negative ones, and often in very similar tests. This would clearly indicate that the testing methods themselves must be scrutinized. Indeed, if the psychological or human condition of a test leads to any sort of prejudice or mental interference, the physiological reactions may themselves be unfavorably affected. Many purely normal responses are often cancelled by merely pointing them out. Is red a warm color, for example? It is by and large in the unconscious reaction of most of us. But ask a person to explain this peculiarity of red and he may end up doubting it completely.

There is little question but that visible light

and color influence and affect living things.² Virtually all plant life will thrive on visible light and be inhibited by infrared and ultraviolet energy. While medical science acknowledges physiological effects in this radiation beyond the two ends of the visible spectrum (infrared and ultraviolet)—and makes therapeutic use of them—any admission of benefits for the particular wavelengths of lights seen by the human eye has been very widely ignored or disregarded. It hardly stands to reason that visible light—the illumination under which the human race has flourished and to which its eyes are adjusted—should be without potency.

But reason and logic cannot suffice for facts. What seems to be evident is that the mystery of visible light, its physiological and psychophysiological importance, has been pretty well neglected. Thus to add to a very sparse record, the writer is happy to set forth the results of his investigations.

SIMPLE EFFECTS OF LIGHT AND COLOR

All fancy aside, and to mention plants once again, the process of photosynthesis by which carbohydrates are formed in chlorophyll is one directly related to visible light. In numerous experiments performed with light and color, greatest effect has been found with the red and blue ends of the visible spectrum—the infrared and ultraviolet region "contributing nothing to the assimilation of carbon dioxide" by which plant food is produced.

Animal life which lives directly and indirectly on plant food is similarly responsive to visible light. Lowly organisms will orient to it, at times responding throughout the entire body. As long ago as 1900,³ Oscar Raab noted the toxicity of dyes on microscopic organisms. A gelatinous creature might move in and out of intense sunlight and be literally at home. Yet with an inert dye introduced, it could be sensitized and destroyed because of excessive light absorption.

*Faber Birren, the writer of this article, is a professional consultant in the field of color. He has written extensively for the medical press and has appeared at many medical conferences. He has made special studies of critical seeing tasks and has written functional color specifications for schools and hospitals. He is currently retained by the U. S. Navy to assist in devising color plans for surface visuals and submarines with the object of creating favorable environments, relieving fatigue, improving seeing conditions and promoting safety.

Although the damaging energy might be due in large part to ultraviolet, such metabolic effects have also been traced to visible light as well.

Most readers may be familiar with such evidences of light sensitivity in human beings. Skin eruptions may follow exposure to sunlight after the use of cosmetics and ointments. "Strawberry rash" and "buckwheat rash" may be traced to light sensitivity brought about by eating certain foods. Here again, while ultraviolet may be the cause of irritation, visible light may be involved. In some rare forms of urticaria solare, visible blue and violet light (with ultraviolet and infrared excluded) has been found to cause an erythema attended by discoloration and swelling.

In fact, the medical profession has recently been impressed by the discovery of A. Kilner,⁴ that visible light may reverse or arrest the injurious effects of ultraviolet light. Two further investigators, Rieck and Carlson⁵ have shown that the death rate in albino mice brought about by severe exposure to ultraviolet, may be substantially reduced where visible light is used as a palliative.

HUMAN REACTIONS AND RESPONSES

It seems apparent that human beings, like all other living things, have a radiation sense. What is significant is that such sense may be independent of conscious vision itself. Awareness of the existence of light will be noted by completely blind individuals even where heat and ultraviolet energy are excluded. Some authorities are of the opinion that the visible light of the sun acts directly on the superficial layers of the skin and has definite metabolic effects.

No matter, reactions to color through the eye itself are many, varied and intriguing. In the main, color effects tend to be in two directions—toward red and toward blue—with the yellow or yellow-green region of the spectrum more or less neutral. Further, these two major colors induce different levels of activation both in the autonomic nervous system and in the brain.

Red seems to have an exciting influence. Goldstein⁶ writes, "It is probably not a false statement if we say that a specific color stimulation is accompanied by a specific response pattern of the entire organism." With reference to red, he mentions the case of a woman with a cerebellar disease who had a tendency to fall unexpectedly. When she wore a red dress such symptoms were more pronounced. Goldstein points out that tremor, torticollis and some conditions of Parkinsonism "can at times be diminished in severity if the individuals are protected against red or yellow, if they wear, for instance, spectacles with green lenses."

In what is called photogenic epilepsy, flickering red light is more likely to induce radical

brain waves and clinical seizures than other colors. Van Buskirk⁷ reports that in several cases the wearing of eyeglasses which cut off the red end of the spectrum reduced the frequency of clinical seizures, even though medication was discontinued.

Working with infants, who obviously had no prior experience with color, Josephine M. Smith⁸ noted that blue light tended to lessen activity and crying. It may be that man's reactions to color in later life are not due solely to cultural training (most psychologists have assumed this), but to deeper-lying responses. Differential responses to color have also been observed in blindfolded subjects. This would again suggest that human reactions to color, while influenced by consciousness, are not altogether dependent on it.

PHYSIOLOGICAL EFFECTS

Blum⁹ relates that Stein called attention to a general light tonus in the muscular reactions of the human body. Conditions of muscular tension and relaxation are noticeable and measurable as tonus changes. Mostly they rise from complete inaction and are more active with warm colors than with cool ones.

Through optic excitation, A. Metzger observed that when light was directed on one eye of many animals and humans, a tonus condition could be produced in the corresponding half of the body. Accompanying these tonus changes were changes in "the superficial and deep-seated sensations, both showing a regular dependence upon optical stimuli." He concluded that the influence of light not only acted on the muscles but was effective in producing changes over the entire organism.

As to experimental method, Metzger had his subject stretch out his arms horizontally in front of his body. When light was thrown on one eye there would be a tonus increase on the same side of the body. The arm on the side of the light would raise itself and deviate toward the side of the illumination. When colors were employed, red light would cause the arms to spread away from each other. Green light would cause them to approach each other in a series of jerky motions. In cases of torticollis, exposure to red light increased restlessness, while green light decreased it.

In similar experiments described by Felix Deutsch⁹ and Friedrich Ellinger,¹⁰ it was found (by H. Ehrenwald) that when the face and neck are illuminated from the side, the outstretched arms will deviate toward the light if red and away from it if blue. To quote Deutsch, "This reaction takes place also when the eyes are tightly sealed to exclude light."

Goldstein who has worked extensively with color and written much about it^{6,11} concludes: "The stronger deviation of the arms in red stimulation corresponds to the experience of being disrupted, thrown out, abnormally attracted to the outerworld. It is only another expression of the patient's feeling of obtrusion, aggression, excitation, by red. The diminution of the deviation [to green illumination] corresponds to the withdrawal from the outer world and retreat to his own quietness, his center. The inner experiences represent the psychological aspect of the reactions of the organism. We are faced in the observable phenomena with the physical aspect."

Goldstein also noted that judgment could be affected by color. Time, for example, was likely to be overestimated under red light and underestimated under green or blue light.

Not all investigations have been able to verify such reactions as arm deviation, but the majority have confirmed the fact that there is marked activation with color. Fere¹² in competent experiments showed autonomic arousal and increased muscular pressure for all colors, green causing the least increase and red the most.

SENSORY EFFECTS

Light and color undoubtedly affect body functions, just as they exert an influence over so-called mind and emotion. In what is known as the unity of the senses, individual experiences are seldom confined to one organ or sense of the organism. As Sherrington concludes, "All parts of the nervous system are connected together and no part of it is probably ever capable of reaction without affecting and being affected by the other parts, and it is a system certainly never absolutely at rest."

Gestalt psychologists such as Heinz Werner¹³ have reviewed phenomena in which sounds will affect color perception. Kravkov,¹⁴ Allen and Schwartz¹⁵ have found that loud noises, strong odors and tastes, tend to raise the sensitivity of the eye to green and to decrease sensitivity to red.

Thus all experiences, color included, have definite inter-relationships. Specifically as to color, however, here are the words of Deutsch. "Every action of light has in its influence physical as well as psychic components." All persons are aware of "sensations and psychic excitations, which through the vegetative nervous system, boost all life functions: increase the appetite, stimulate circulation, etc., and through these manifestations the physical influence of light upon the disease process is in turn enhanced."

It may thus be generalized that color affects muscular tension, cortical activation (brain waves), heart rate, respiration and other functions of the autonomic nervous system—and certainly that it arouses definite emotional and

esthetic reactions, likes and dislikes, pleasant and unpleasant associations. Research to date, however, has lacked good scientific control. Some tests have been largely empirical, and others have been concerned with certain human functions only.

THE WORK OF ROBERT GERARD

To be more thorough and specific, what takes place and what methodology may be used to deal with color in fairly definite and meaningful terms? For sound research techniques and impressive quantitative data, the world of color, psychology and medicine is indebted to the recent efforts of Robert Gerard.^{16,17}

In an outstanding doctor's thesis in psychology for the University of California at Los Angeles, Gerard has painstakingly reviewed the whole area of light, color and their psycho-physiological influences. Probably for the first time he has tested the reactions of the entire organism, using advanced and modern techniques. Profiting from the experiences of others, he has evolved new approaches and has come up with a series of competent facts.

Gerard set forth to ask and answer several questions. Here are some of them. Is the response to color differential? That is, do such hues as red and blue arouse different feelings and emotions? Do they induce correlated changes in autonomic functions, brain activity and subjective feelings? Do the patterns of response correspond to the relative energy of the colored stimuli?

In his experiments, Gerard made use of red, blue and white lights transmitted on a diffusing screen. Brightness and spectral purity were balanced. Measurements were made of blood pressure, palmar conductance (electrodes in the palm of the hand which indicate arousal of the autonomic nervous system through reaction of the sweat glands), respiration rate, heart rate, muscular activation, frequency of eyeblinks, and brain waves by means of an electro-encephalogram.

Affective responses, based on the personal experience, judgment and feeling of the subjects were also recorded. These responses, incidentally, ran rather true to traditional form. On the subjective side, red was found somewhat disturbing to the more anxious subjects. In fact, the higher their chronic tension, the more they were affected physiologically and psychologically by red. Blue had reverse effects, for anxious subjects were relaxed and calmed by it. From the point of view of clinical psychology, this may be an important finding, for it points to the possibility that blue may be effective as a tranquilizer in cases of tension and anxiety. In brief, there was a greater feeling of well-being, greater calm, more pleasant ideation with blue, and more tension, ex-

citement and arousal with red. Both reactions may well hold implications for clinical practice.

On the physiological side, Gerard's results may be summarized as follows: Blood pressure for the most part increased under the influence of red light and decreased under blue light. In palmar conductance, both colors produced immediate increases. However, arousal after a period of time was consistently higher for red than for blue. "Respiratory movements increased during exposure to red light, and decreased during blue illumination." With heart rate, no appreciable differences were found between the stimulation of red and blue. Frequency of eyeblinks increased during exposure of red light and decreased during exposure of blue light.

Regarding cortical activation, the brain was markedly affected upon the introduction of all three lights. With time, however (up to 10 minutes), activation remained consistently greater for red than for blue.

It should be appreciated, of course, that in palmar conductance and cortical activation, any stimulus is likely to show effects. What is significant as to color is that red consistently showed a more pronounced pattern over blue, both upon the introduction of this stimulus and after a period of time.

THEORETICAL AND PRACTICAL IMPLICATIONS

Gerard is extremely modest in the interpretation of his results. He proposes that psychophysiological activation tends to increase with wavelength from blue to red and from low to high stimulus. Gerard's caution regarding all implications of his tests is commendable. He worked with normal subjects and, in all his writings, points out the need for more research. The medical profession is quite aware of the fact that because color has such a strong emotional impact, it is not always easy to be strictly objective in dealing with it. Gerard is conscious of this and has been remarkably fair and frank.

In its effects, blue seems to hold particular merits. Gerard's thesis states, "the results obtained with blue light suggest trying out its use as an adjunct or supplemental form of therapy in the alleviation of various conditions."

It might act as a relaxant and tranquilizer to dampen psychophysiological arousal in anxious individuals, since this effect was marked in the more anxious subjects.

Because blue lowers blood pressure it may have possibilities in the treatment of hypertension.

The general relaxation and relief from tension experienced by the subjects suggests that

blue may be of help to alleviate muscle spasms, and perhaps also torticollis and tremors.

Because it reduced eyeblink frequency and is subjectively experienced as soothing, it might have some advantages in eye irritations.

Because of its restful effects, dim blue illumination might be "conducive to sleep in cases of insomnia."

It might further contribute to the *subjective* relief of pain due to its reported sedative action.

Simply, in Gerard's findings, red and white stimulation was pretty much the same. From this it may be assumed that red and other "warm" colors are more related to excitation in general. Blue and other "cool" colors, however, may be more specific in their particular effects. Yet red might be useful in arousing persons troubled with reactive depression or neurasthenia. It may have value in increasing muscular tonus or blood pressure in hypotensive individuals.

On a generality such as this (which is largely the author's) Gerard has significant comments to make. While white light may be physiologically stimulating, it may also be psychologically boring. In other words, stimulation by itself does not tell the whole story. Such boredom (with white) might prove irritating and hence be reflected in physiological arousal. On the other hand, arousal with red seems to go along with feelings of aggression, sex, fear of injury. Autonomic reactions may be similar, but to the subject there may be a world of difference, so to speak.

What is further needed, as Gerard has pointed out, is more study as to the differential effects of color, orange and yellow as well as red, and green and violet as well as blue. Such research will no doubt come in time. It would be most important to men like the writer who devote time to practical applications of color.

COLOR IN EVERYDAY LIFE

For many years it has been the writer's profession to work with color and with people in all walks of life. He has kept abreast of color research in the fields of medical therapy, ophthalmology and psychology and has endeavored to put to wholly practical use some of the more theoretical findings of the scientific specialist.

He has worked in many fields and written many articles on the application of color to hospitals,¹⁸ schools,¹⁹ factories.²⁰ He has, on invitation, set forth his experiences in the visual aspects of color,^{21,22} safety,²³ highway accidents.²⁴ He has prepared manuals of standard color practice for the U. S. Government.²⁵ In all these activities he has tried to adhere to the best scien-

tific practice and to avoid those purely speculative views which so often beset anyone dealing with the highly temperamental, esthetic (and often occult) medium of color.

With an eye to sound research and practical experience, certain conclusions affecting the use of color in everyday life are here enumerated.

1. There is in color and light what might be called a centrifugal action—away from the organism to its environment. With high levels of illumination, warm and luminous colors in the surroundings (yellow, peach, pink), the body tends to direct its attention outward. There is increased activation in general, alertness, outward orientation. Such an environment is conducive to muscular effort, action and cheerful spirit. It is a good setting for factories, schools, homes where manual tasks are performed or where sports are engaged in.

2. On the other hand, color and light may have a centripetal action—away from the environment and toward the organism. With softer surroundings, cooler hues (gray, blue, green, turquoise) and lower brightness, there is less distraction and a person is better able to concentrate on difficult visual and mental tasks. Good inward orientation is furthered. Here is an appropriate setting for sedentary occupations requiring severe use of the eyes or brain—offices, study rooms, fine assembly in industry.

3. The two principles expressed above have been aptly stated by Goldstein. "One could say red is inciting to activity and favorable for emotionally-determined actions; green creates the condition of meditation and exact fulfillment of the task. Red may be suited to produce the emotional background out of which ideas and action will emerge; in green these ideas will be developed and the actions executed."

4. Such wise practice, however, is not always observed. Lighting engineers, for example, are likely to deal with human environments in terms of light intensity and brightness alone. These are obviously important, but without attention to color as well, the truly ideal condition is not realized. Today high levels of *general* illumination are often specified where critical seeing is necessary. While it may be granted that the eye needs a lot of light to see clearly, if this necessity leads to high brightness in the surroundings, the organism may be seriously handicapped. Brightness not only will draw attention from a task but it may defy good visual adjustment and concentration. If intense *general* illumination is required, at least the surroundings ought to be suppressed in tone. Better still, the general illumination should be moderate, and localized light sources should be added and directed immediately

over the task. This will put attention where it belongs and eliminate distractions in the outer fields of view. To make a point, note how often a person will close his eyes when trying to solve a complex mental problem; the impulse here is to get rid of the environment completely.

5. In more psychological realms, experimental work in schools and hospitals has emphasized further strategies with color. Outwardly integrated persons, "nervous" persons, small children will find relaxation in an actively colored environment. The reason is a very simple one: visual (and emotional) excitement in the environment will effectively "match" the spirits of such persons and thereupon set them at ease. Attempts at pacification, through color or anything else, may only serve to "bottle up" such spirits to a bursting point.

6. Conversely, inwardly integrated persons will ordinarily prefer a more sedate environment—and it will provide the equanimity they innately prefer. A quiet soul, told to wear a red dress or a red tie, may by no means respond accordingly. On the contrary, such boldness may make him increasingly shy and embarrassed.

In cases of mental disturbance, however, reverse policies may be necessary. A person with an inordinate craving for bloody red—which might lead to trouble—probably should be exposed to blue in order to counteract his temper. The melancholy person, who is tolerant only of drabness, probably should be exposed to red to animate him, physiologically as well as psychically.

REFERENCES

1. Birren, Faber. "The Emotional Significance of Color Preference." *Am. J. Occup. Therapy*, VI:2 (March-April), 1952.
2. Birren, Faber. *Color Psychology and Color Therapy*, New York: McGraw-Hill Book Co., 1950.
3. Blum, H. F. *Photodynamic Action and Diseases Caused by Light*. New York: Reinhold Publishing Corp., 1941.
4. Kelner, A. "Revival by Light," *Scientific American*, 1951, 184(5).
5. Rieck, A. F., and Carlson, S. D. "Photorecovery from the Effects of Ultraviolet Radiation in the Albino Mouse." *J. Cell & Comp. Physiol.*, 1955, 46.
6. Goldstein, Kurt, "Some Experimental Observations Concerning the Influence of Color on the Function of the Organism." *Occ. Ther. Rehabil.*, June, 1942.
7. Van Buskirk, C., et al. "The Effect of Different Modalities of Light on the Activation of the EEG." *EEG Clin. Neurophysiol.*, 1952, 4.
8. Smith, Josephine M. "The Relative Brightness Values of Three Hues for Newborn Infants." *Univ. Iowa Stud. Infant Beh.* III, 1936, 12:1.
9. Deutsch, Felix. "Psycho-physical Reactions of the Vascular System to Influence of Light and to Impressions Gained through Light." *Folia Clinica Orientalia*, 1937, Vol. 1, Fasc. 3 and 4.
10. Ellinger, Friedrich. *Biological Effects of Radiation*. New York: McGraw-Hill Book Co., 1936.

(Continued on page 133)

A NEW PROSTHETIC MULTIPLE ACTION SHOULDER UNIT*

LEONARD F. BENDER, M.D.**
LYLA M. SPELBRING, M.A., O.T.R.†
HELEN BARROWS, O.T.R.‡

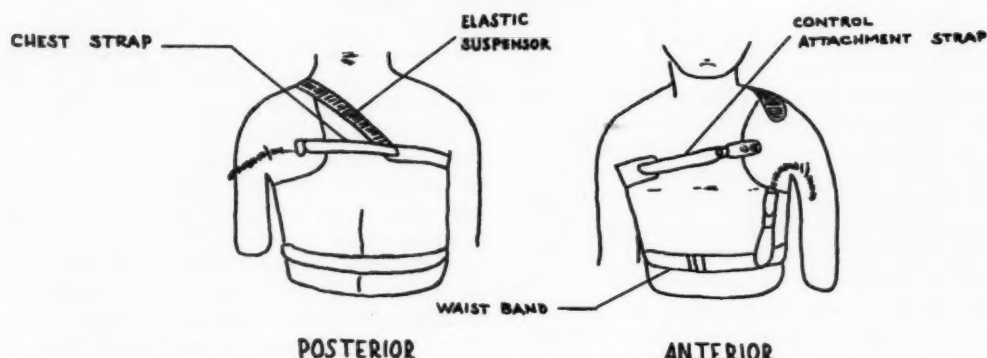


Figure 1. Standard forequarter prosthesis with rigid shoulder unit fixed in a normal anatomical position. Typical harnessing consists of a chest strap and elastic suspensor attached as shown.

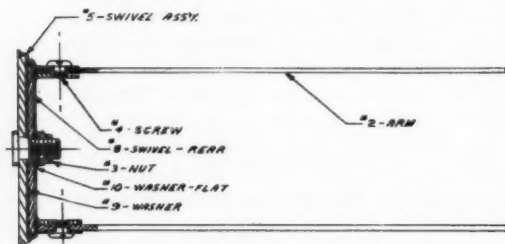


Figure 2. Assembly of multiple action shoulder unit.

Forequarter type shoulder amputations provide some of the most difficult problems in the fitting and training of upper extremity amputees. The forequarter prosthesis commonly used at the present time has a non-moving shoulder unit which is fixed in a normal anatomical position (Figure 1). It is impossible to change the position of the arm at the shoulder joint; thus only elbow, wrist and terminal device maneuvers are possible. One of the obvious limitations to the effectiveness of this unit is the patient's inability to position the arm at the shoulder for adequate function in dressing, eating, homemaking, vocational and avocational activities.

Three separate attempts have been made by us to fill the need for more functional forequarter and shoulder disarticulation prostheses. First, an arm was fabricated with a manually operated sectional plate unit at the shoulder which permitted limited humeral flexion and extension. When it was found that this modification did not increase function significantly, a second prosthesis which allowed only manual abduction of the arm at the

shoulder was designed and fabricated. This unit also had certain functional limitations. Therefore, the combined motions of these two experimental shoulder units were incorporated in a new multiple action shoulder unit (MASU) (Figure 2) which permits ranges of 0° to 90° of abduction, 0° to 135° of flexion, and 0° to 50° of extension at the shoulder as well as combinations of flexion or extension with abduction (Figure 3B). Limits of ranges of motion vary with the tension of the control strap. The desired degree of passive abduction is maintained by a friction hinge at the shoulder joint, and similarly, flexion or extension is maintained by the use of circular friction plates (Figure 2).

COMPONENTS

The shoulder section is double wall construction and varies in size to accommodate the type of amputation. The swivel assembly of this MASU is laminated into the shoulder section, and the extensions of the hinge of the MASU are laminated into the upper arm section. The remaining components (elbow, forearm and wrist) are the same as those in a standard above-elbow prosthesis.

*Designed and fabricated by Dominic Lemma of the Wright and Filippis Artificial Limb Company, Detroit, Michigan.

**Associate professor of physical medicine and rehabilitation, University of Michigan School of Medicine and Medical Center, Ann Arbor, Michigan; consultant, Veterans Administration Hospital, Ann Arbor, Michigan.

†Supervisor of occupational therapy, University of Michigan Medical Center, Ann Arbor, Michigan.

‡Chief of occupational therapy, Veterans Administration Hospital, Ann Arbor, Michigan.

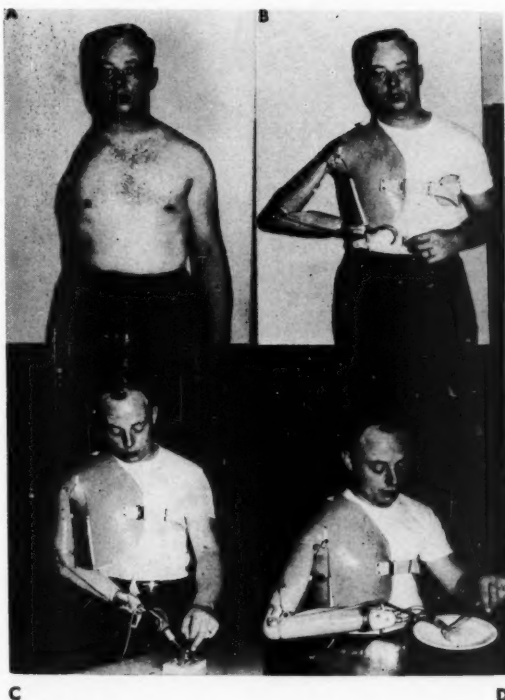


Figure 3.
 A. Forequarter amputee.
 B. Dressing activity with prosthesis in abduction at the shoulder.
 C. Vocational activity with prosthesis in slight abduction and flexion at the shoulder.
 D. Eating with prosthesis positioned in 45° abduction.

A voluntary closing terminal device appears to be more functional and more easily operated by a forequarter amputee than a voluntary opening terminal device. The maintenance of constant tension on the control cable while holding an object in a voluntary opening terminal device is difficult for these amputees. Since it is most unusual for a forequarter amputee to do heavy manual labor using his prosthesis, a rugged hook of the voluntary opening type is seldom necessary or indicated.

HARNESSING

The harnessing of the MASU is similar to that of the standard forequarter or shoulder disarticulation prosthesis (Figure 1). A basic chest strap is attached to the anterior aspect of the shoulder cap, runs across the chest, under the axilla and across the back to the control cable hanger. An elastic suspensor strap is fastened to the posterior superior aspect of the shoulder cap and is brought diagonally down across the back to fasten to the chest strap on the sound side of the spinal column. Occasionally it is necessary to divide the chest strap anteriorly into a Y (Figure 6A) and attach it to the shoulder section both superiorly and inferiorly for greater stability.

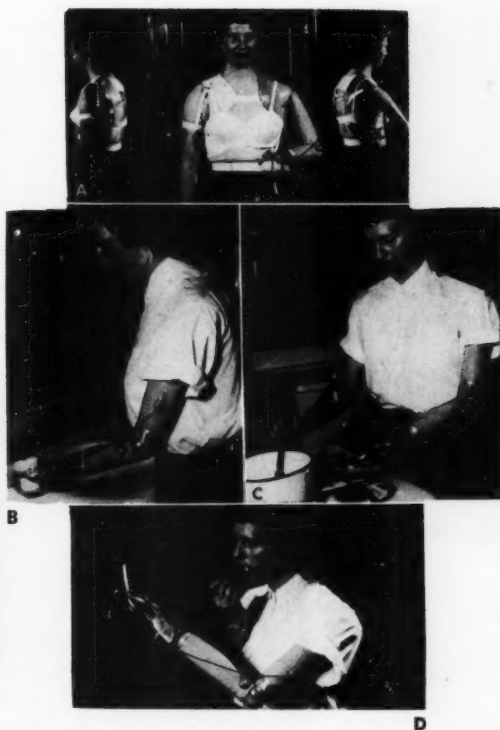


Figure 4.
 A. Three views of a forequarter prosthesis showing a variation in the harnessing for a female amputee.
 B. Patient with prosthesis in flexion at the shoulder and using APRL hook to place paper cup in position under faucet.
 C. Household activities with prosthesis in flexion at the shoulder and being used to stabilize object.
 D. Prosthesis positioned in 45° flexion at the shoulder to permit easier application of cosmetics.

The method of harnessing can be varied to suit individual needs. The following cases exemplify some of the variations that have been used:

a. A 48-year-old male forequarter amputee (Figure 5A) had limitation of function of his prosthesis which necessitated adding an axilla loop and shoulder sling on the sound side. This provided greater excursion of the control cable and permitted more efficient use of the arm.

b. Adequate stabilization of the chest shell became a problem for a 21-year-old forequarter amputee (Figure 6A). This was solved by the addition of a shoulder strap on the sound side and by division of the thoracic strap at its attachment to the shell anteriorly.

c. In the case of a 29-year-old female forequarter amputee, it was necessary to devise a specific harness to accommodate the breast which remained on the amputated side, to provide adequate stabilization, and to alleviate intolerable pressure points at the edges of the shoulder section and beneath the sound axilla (Figure 4A).



Figure 5. A and B. Dressing activities performed more easily with the combination of shoulder flexion and abduction in the MASU.

In this case a pliable leather half-vest was attached to the prosthesis by two anterior thoracic straps and two posterior thoracic straps. Because of extreme discomfort caused by the control strap axilla loop on the sound side, a sling was placed, instead, on the upper forearm to activate the control cable.

CONTROLS

The controls are operated like those of the standard shoulder disarticulation prosthesis. The elbow lock is activated by shoulder elevation on the amputated side or lateral tilt of the trunk to the sound side. This provides the necessary excursion of the elbow lock control cable attached to a waist band or perineal strap. Elbow flexion and operation of the terminal device are obtained by shoulder flexion on the sound side, by chest expansion, by abduction of the scapula, by humeral flexion or by a combination of these motions.

TRAINING

The improved function of the new shoulder unit is evident to the occupational therapist in training patients in the techniques of dressing, eating, hygiene, homemaking, recreational and vocational activities.

TABLE I
Functional Evaluation of Prosthetic Devices
for the Disarticulated Shoulder

Activities	Shoulder Units	
	Rigid	Multiple Action
<i>Dressing</i>		
Put on coat, shirt	1	2
Buckle belt	1	2
Tie shoe laces	0	2
Fasten garters	1	2
Close zipper	1	2
Fasten necklace (front)	1	2
Fasten bra (front)	1	2
Button cuffs	1	2
Tie necktie	1	2
<i>Eating</i>		
Carry tray	2	2
Hold glass at faucet	1	2
Hold fork for cutting	1	2
<i>Hygiene</i>		
Hold toothpaste, etc.	2	2
Hold hair curler	0	2
Hold compact and lipstick	1	2
<i>Homemaking</i>		
Hold pan on stove	1	2
Hold dish mop	1	2
Hold egg beater	1	2
Hold vegetables to peel	1	2
Hold mop or broom to sweep	1	2
Mop, sweep	1	2
Hold clothes, iron	1	2
Hang clothes	0	2
Change pillowcases	2	2
Wash dishes at sink	1	2
<i>Recreational</i>		
Hold rod, hook, etc. fish	1	2
Stabilize gun, hunt	0	2
Hold playing cards	1	2
Hold newspaper	1	2
Hold materials for needlework	2	2
<i>Vocational</i>		
Hold telephone	0	2
Work at desk, table or workbench	1	2
<i>Use tools:</i>		
Plane	0	2
Brace and Bit	0	2
Screwdriver	1	2
Vice (position wood)	1	2
Hammer and nail	1	2
<i>Miscellaneous</i>		
Improve posture and comfort	1	2
Tie package	1	2
Use pencil sharpener	1	2
<i>Key:</i>		
0—Impossible		
1—Possible, not practical		
2—Possible and practical		

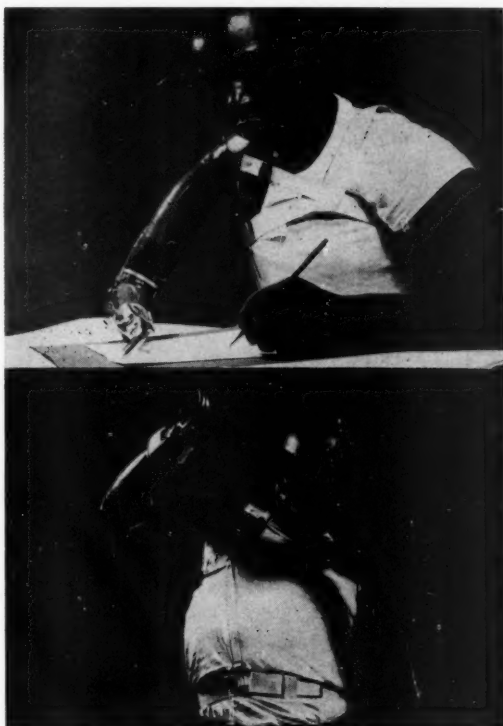


Figure 6. (top picture A) With the prosthesis position in abduction and flexion at the shoulder, desk activities are more practical. In the bottom picture (B) the use of a rifle necessitates positioning the arm in nearly maximum abduction and flexion at the shoulder.

Length of training time averages four days (six hours each) for each patient, but this varies proportionately to the problems that arise. Many of the fitting and harnessing problems which interfere with the training of above-elbow amputees are found in forequarter amputees also. Often several revisions of the harness are necessary before the maximum use of the prosthesis can be realized; this may involve mechanical problems at the shoulder and/or at the elbow, difficulty obtaining sufficient excursion of the control cable to operate the elbow and terminal device satisfactorily and prevention of skin irritation from the straps. Discomfort caused by the contour of the socket and the weight of the prosthesis occurs rarely. However, in the opinion of the therapists who have had experience with the MASU, training is more readily accomplished with a patient who has a forequarter type prosthesis with the new unit, than with a patient who has the standard above elbow prosthesis.

Table I shows the comparison in functional capacities of patients using a prosthesis incorporating in some cases the rigid shoulder unit and in

six cases, the MASU. Many activities that are difficult, and some that are impossible with the rigid unit, can be accomplished easily with the new shoulder unit.

SUMMARY

In six cases, a comparison of function of the conventional rigid shoulder unit and the new multiple action shoulder unit has been made. The latter unit is much more functional for the patient with a forequarter type of amputation. The superiority of the new unit over the old is evidenced in activities which necessitate positions of abduction, flexion, extension or a combination of these motions at the shoulder. The MASU enables the wearer to perform more activities for himself, decreases the amount of physical assistance required from his family and increases his employment potential.

Effects of Color . . .

(Continued from page 129)

11. Goldstein, Kurt. *The Organism*. New York: American Book Co., 1939.
12. Fere, C. *Sensation et Mouvement*. Paris: Felix Alcan, 1900.
13. Werner, Heinz. *Comparative Psychology of Mental Development*. Chicago: Follett Publishing Co., 1948.
14. Kravkov, S. V. "Color Vision and Autonomic Nervous System." *J. Opt. Soc. Am.*, June, 1942.
15. Allen, Frank, and Schwartz, Manuel. "The Effect of Stimulation of the Senses, Taste, and Smell upon the Sensibility of the Organs of Vision." *J. Gen. Physiol.*, Sept. 20, 1940.
16. Gerard, Robert. *Differential Effects of Colored Lights on Psychophysiological Functions*. Doctoral dissertation on file with librarian, U. of Cal., Los Angeles, 1957.
17. Gerard, Robert. "Color and Emotional Arousal," *American Psychologist*, July, 1958, 13, 340 (abstract).
18. Birren, Faber. "Color Is More Than Beauty." *Mod. Hosp.*, Jan. 1952.
19. Birren, Faber. "The Psychology of Color for the Schoolroom." *Nation's Schools*, April, 1956.
20. Birren, Faber. "Color Conditioning: Aid to Getting Work Done." *Dun's Review*, Jan. 1949.
21. Birren, Faber. "The Ophthalmic Aspects of Illumination, Brightness and Color." *Trans. Amer. Acad. Ophth. Otolaryng.*, May-June, 1948.
22. Birren, Faber. "An Organic Approach to Illumination and Color." *Trans. Amer. Acad. Ophth. Otolaryng.*, Jan.-Feb., 1952.
23. Birren, Faber. "Color's Cash Value." *Nat. Safety News*, January, 1949.
24. Birren, Faber. "Safety on the Highway: a Problem of Vision, Visibility, and Color." *Am. J. Ophth.*, February, 1957.
25. Birren, Faber. *The Application of Color to Shore Establishment*. U. S. Navy Dept., Washington, 1953.

FINGER EXERCISER

ROBERT W. DEMERS, O.T.R.*

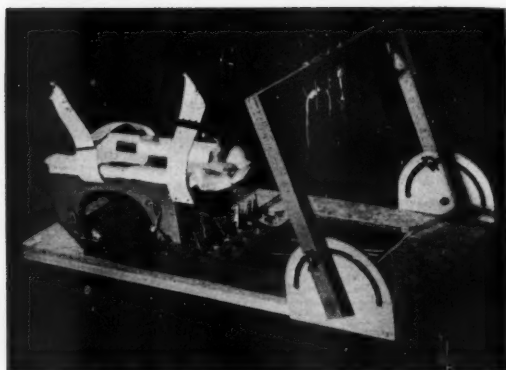


Figure I. Complete exerciser, with melmac arm rest and arm straps, adjustable crossarm with four alligator clips, plastic window with scale for recording, six alligator clips and pulleys beneath one end of the arm rest.



Figure II. Finger glove. It is a converted cotton glove with thumb removed. A custom made glove may also be constructed.

OBJECTIVE

The problems of adequate resistive and assistive exercise for the fingers has always been and still is a constant challenge. The equipment introduced here is an attempt to provide appropriate exercise for all of the fingers and thumb by offering assistance and resistance to the finger extensors and flexors and resistance in opposition of all the fingers.

DESCRIPTION

Figure I shows all of the basic parts of the finger exerciser except the glove. The melmac arm rest with molded palmar supporting surface is covered with two layers of moleskin with a layer of three-eighths inch sponge rubber near the heel area of the palm. The crossarm is adjustable with four tension bands and alligator clips. There are six alligator clips beneath the palmar surface of the arm and hand rest and the six pulleys for each are mounted underneath the main frame.

Figure II shows the converted finger glove. The importance of this glove cannot be overemphasized. The thumb of the glove is removed completely. The entire palm area is cut away along with all but the tips of each finger. It is then turned inside out with all seams re-enforced and the soft fringes left intact for attachment areas for the alligator clips. A custom made glove could be constructed after this same pattern. This type of glove was decided upon for several reasons. (1) It provides a snug, soft yet *non-binding* cap for the finger and receives an alligator clip to the best advantage. (2) By retaining the back of the glove, a tension is applied at the wrist area which will keep an even pull at the finger

caps, keeping them gently in place. This glove, being in one piece, can be put on by the patient. (3) A glove, per se, is difficult to slip over the disabled hand, and/or becomes loose and sloppy. (4) All other types of finger attachments are either too loose, too tight, or too difficult to put on.

PROCEDURE

As in Figure III the arm of the patient to be treated is placed on the arm rest and strapped in firmly to eliminate as much motion as possible. The finger glove is slipped over the fingers and the fingers and the glove tension clips at the rear of the arm rest are attached to the wrist area to hold it in place. If the thumb is abducted across the palm or needs to be held back, the thumb glove is slipped on and the thumb tension clip attached to hold the thumb in the proper position. This attachment is also used to offer thumb resistance in opposition or adduction exercises. The series of six alligator clips directly beneath the hand may be attached to the finger gloves in any combinations desired so as to offer resistance to extension of any or all of the four fingers. Tension can be increased or decreased by the size, number or length of rubber bands used. The one-eighth inch by three inch band was used in this model. Some were split, some doubled or coupled, depending upon the need.)

If only a trace of extension is available the crossarm clips can be attached to the finger gloves

*Supervisor, Sheltered Workshop, Crippled Children's Society of Los Angeles County.

This equipment was developed during affiliation at V.A.C. G.M.A.S. Hospital, L.A. 25, Calif.

in the same manner to offer assistance to weak extensors. The direction or angle of pull on the crossarm clips can be adjusted by swinging the entire crossarm on its adjusters. A combination of crossarm clips and thumb tension can be used in offering resistive exercise in opposition with all of the fingers, collectively or individually. The crossarm clips will afford graded resistance to flexion of any or all of the fingers. The glove tension alone will provide a gentle resistance to the extensor expansion mechanism of the fingers, more in the nature of positioning, yet of some value.

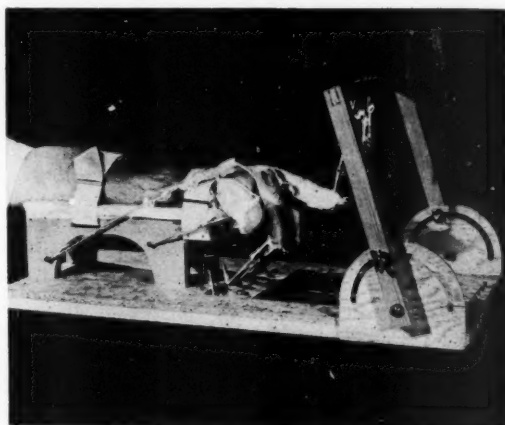


Figure III. Arm positioning on arm rest, glove positioning on patient's hand, and use of the alligator clips and tension bands.

CONSTRUCTION

The main frame work is made of twelve inch by twenty-five inch by three-eighth inch plywood, with five-eighth inch square runners underneath. A seven-and-a-half inch square plastic window with scales for recording is inserted to provide some measure of interest and incentive. The crossarm is constructed of one inch by three-fourth inch stock with an open mortise and tenon joint at the top. The crossarm adjusters are cut from one-fourth inch plywood.

HARDWARE

Quantity	Description
2	one-fourth inch by two inch bolts with wing nuts and washers (for cross-arm adjusters)
14	three-fourth inch No. 6 round head screws, glued (for rubber band anchors)
6	one-eighth inch by one and one-fourth inch round head bolts with nuts and lock washers (to fasten pulleys to frame)
6	one-fourth inch swiveled pulleys (enclosed)
2	one-fourth inch by two inch bolts with nuts and washers (cross arm pivot)
14	alligator clips (radio type)
4	one and one-fourth inch No. 10 flat head screws (to hold arm rest to frame)

AJOT, XIII, 3, 1959

CONCLUSION

This equipment has been used in the kinetic clinic by patients with the following diagnoses: (1) unoperable right parietal tumor (brain) (2) Guillian-Barre syndrome (3) post-cerebral vascular occlusion, left hemiplegia (4) post polio. Treatments were given to these patients during a period of approximately ten days of clinic activity used for testing. Since this period the exerciser has been in continued use for two months with patients with other diagnoses, effecting observable and measurable results.

* * *

Grateful acknowledgement is made to all those who contributed their general suggestions and encouragement.

Photography courtesy of the Veterans Administration Photography Laboratory, Los Angeles 25, Calif.

The Gesell Schedules . . .

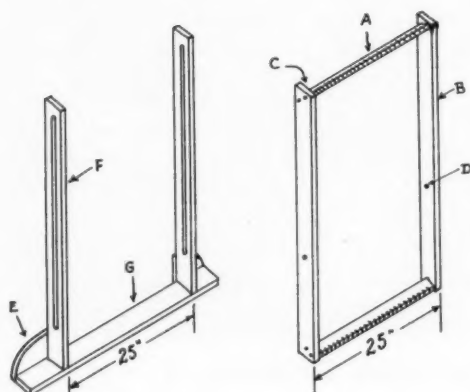
(Continued from page 124)

10. Gesell, A. *Infant Development*. New York: Harper and Brothers, 1952.
11. Gesell, A. "Ontogenesis of Infant Behavior," Chapter 6, pp 335-373, *Manual of Child Psychology*, 2nd ed. Edited by L. Carmichael. New York: John Wiley & Sons, Inc., 1954.
12. Goldfarb, W. "Psychological Privation in Infancy and Subsequent Adjustment." *Am. J. Orthopsychiat.*, 15, 1945, pp. 259-274.
13. Jackson, E. B. "Child Development Patterns in the United States," *Mental Health and Infant Development*, Vol. I, edited by Soddy, K. New York: Basic Books, Inc., 1956, pp. 87-92.
14. Kluckhohn, C., Murray, H. A., and Schneider, D. N. (eds.) "Personality in Nature, Society, and Culture," 2nd ed. New York: Alfred A. Knopf, 1956. (See Chapter 2: Personality formation: the determinants, by Kluckhohn and Murray).
15. Provence, S. "Developmental Neurology." *Pediatric Diagnosis*. Ed. by Green, M. and Richmond, J. B. Philadelphia: W. B. Saunders Co., 1954, pp 152-171.
16. Rappaport, D. *Diagnostic Psychological Testing*, Vol. I. Chicago, Ill.: Yearbook Publishers, 1945.
17. Spitz, R. A. "Hospitalism, an Inquiry into Genesis of Psychiatric Conditions in Early Childhood." *Psychoanalytic Study of the Child*, Vol. I. New York: International Univ. Press, 1945, pp 53-74.
18. Stolz, L. M. "Review of Youth." *The Years from Ten to Sixteen* by Gesell, A., Ilg, F. L., and Ames, L. B. in *Contemporary Psychology*, 3, 1, Jan. 1958, pp 10-15.
19. Watson, E. H. and Lowrey, G. H. *Growth and Development of Children*. Chicago, Ill.: The Yearbook Publishers, Inc., 1951.
20. Wittenborn, J. R., et al.: "A Study of Adoptive Children. I: Interviews as a Source of Scores for Children and Their Homes." *Psychol. Monographs*, Vol. 70, No. 1 (Whole No. 408), 1956, pp. 1-58. "A Study of Adoptive Children. II: The Predictive Validity of the Yale Developmental Examination of Infant Behavior," *ibid*, Vol. 70, No. 2 (Whole No. 409), pp. 59-92.

Picture Page

Adjustable Rug Knotting Frame

CONSTRUCTION DETAIL



A. $\frac{1}{2}$ " x $1\frac{1}{2}$ " x 24" birch with $\frac{3}{8}$ " cuts spaced $\frac{1}{2}$ " apart

B. $\frac{1}{2}$ " x 2" x 36" birch

C. Piece joined together with glue and countersunk wood screws (drill guide holes before screwing). Join piece "A" at an angle for ease in knotting first few rows.

D. Drill $\frac{5}{16}$ " hole 15" from one end for joining to stand with $\frac{5}{16}$ " bolt and wing nut (use washer next to wing nut but not between boards "F" & "B"). The hole is not in the center of board "B" so that higher position of frame can be set if desired.

E. Reinforcing block. Join with glue and screws.

F. $\frac{5}{8}$ " x 3" x 36" firm plywood with $\frac{5}{16}$ " slot 2" from top end and 6" from bottom end.

G. $\frac{5}{8}$ " x 3" x 36" fir plywood base.



C-clamped to bed table for the patient in a prone position. Patient's head is at foot of bed.



C-clamped to bed table for the patient in a supine position. The other end of the frame can be reached if reversed in the stand after $\frac{1}{2}$ of the rug is completed. (As shown.)

At highest position for forward flexion of the shoulder. Also used as a standing tolerance activity. C-clamp to table edge.



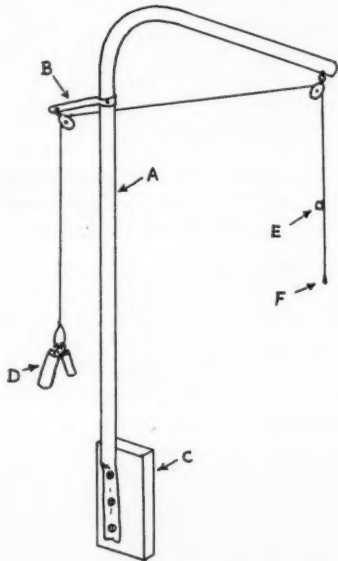
At low tilted position for the seated patient. C-clamp to table edge.

*Submitted by Herbert Post, O.T.R., director of occupational therapy, Fairview Hospital, Minneapolis, Minnesota.

Picture Page

Diversified Upper Extremity Strengthening Unit

CONSTRUCTION DETAIL



- A. $1\frac{1}{4}$ " conduit 6' long. Flatten end for screwing to board "C"
- B. $\frac{1}{2}$ " band iron extension to prevent weights from hitting conduit
- C. $\frac{3}{4}$ " x 4" x 12" plywood block for C-clamping unit to table leg
- D. Lead filled conduit weights with screw hooks inserted

Fill: $1\frac{1}{4}$ " conduit 4" long for a $1\frac{1}{2}$ lb. weight
 1" conduit $4\frac{1}{4}$ " long for a 1 lb. weight
 $\frac{3}{4}$ " conduit $3\frac{3}{4}$ " long for a $\frac{1}{2}$ lb. weight
 $\frac{3}{4}$ " conduit 2" long for a $\frac{1}{4}$ lb. weight

E. Piece of rubber hose placed on cord to keep tool within reach of patient when released.

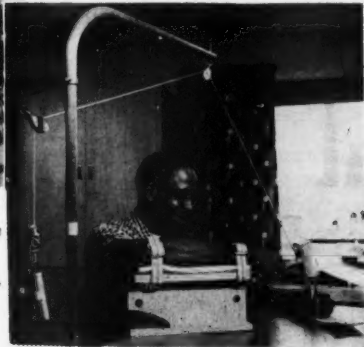
F. Lanyard hook for attaching tools.



Various tools such as a copper tooling stylus, pencil, brush or leather tools can be attached to the unit for strengthening grasp. Tool handles can be built up with foam rubber if finger flexion is limited. Weights are added to necessitate active flexion to prevent tool from being pulled out of the grasp.



Resistance attached to a wrist cuff enables the patient to work at a number of different activities while strengthening muscle groups. The unit is shown set up for strengthening internal rotation of the shoulder. The triceps and shoulder depressors can also be strengthened through proper positioning of patient and work.



By stabilizing the forearm and adding resistance to a mallet the patient's wrist flexors can be strengthened.

*Submitted by Herbert Post, O.T.R., director of occupational therapy, Fairview Hospital, Minneapolis, Minnesota.

NATIONALLY SPEAKING

From the President

In our recent consideration of the organization of our national association we have done some study of the membership of our Board of Management and the House of Delegates. The information which has been obtained is of interest in the historical facts and the trends which it shows. This material has been taken from the annual issue of the Yearbook of the American Occupational Therapy Association for the years 1947-1957 inclusive.

The greatest growth of the Association has been since World War II. Because of civil defense regulations during the war no congresses of more than fifty people were permitted so that from 1942-1946 no annual meetings of the Association were held. Since the constitution did not permit voting by mail, the officers of the Association continued to function without change. Hence the choice of years included in this survey.

During this period thirty-seven persons were elected to the Board of Management from the membership at large. Eleven of these served for one term (3 years) only. Thirteen were elected for a second term. Three members served for two terms and were re-elected after a lapse of one or more years. One individual (your present president) served one term as second vice-president, two terms as first vice-president then went off the Board to be re-elected three years later as president. One served for three terms as treasurer. (This is the only office with no restriction on the number of terms served.) One was elected as a member for one term, one term as first vice-president and then as president. One elected as a member for two years, went off, was re-elected as a member, served one year and was elected first vice-president. One was a Board member for two terms and then became treasurer. Three are serving their first term.

Nineteen states were represented by these thirty-seven persons. Five of these were western states, sixteen mid-west and twenty-two eastern. Five persons moved from one state to another. During this period Mrs. Kahmann (Indiana) served as president for two terms. Miss McNary (Wisconsin) served one term, Colonel Robinson (Colorado and Washington, D. C.) served one term.

Individual members elected to the Board from the House of Delegates numbered forty. Twenty-two states were represented. Of these nine came

from the west, twelve from the mid-west and nineteen from the east. Distribution ranged from California to Connecticut, Maine to Texas, Washington to Virginia. Speakers of the House were elected as follows: Illinois, 1; Indiana, 1; Ohio, 1; New York, 3; Pennsylvania, 1.

In all, twenty-five states have been represented on the Board. There are now 39 associations which are members of the House of Delegates.

The spread of representation of both members elected from the membership at large and from the delegates has increased steadily as new associations have been organized and have become members of the House of Delegates. This indicates a very healthy broadening of the leadership of our profession.

As we have grown, the organization of our Association has become more and more complicated and has involved increasing numbers of persons throughout the country. The constitution provides for two standing committees: nominating and registration. The Board, however, has the power to create standing committees as may be deemed necessary. There are at the present time seventeen more standing committees, as follows: permanent conference, recognitions, history, international, legislation and civil service, recruitment and publicity, special projects fund*, AJOT editorial, civil defense*, special studies, OT assistants, clinical procedures, and education composed of the council on education, curriculum, student affiliations, graduate study and scholarships. The two starred committees are made up of representatives of each of the state associations. The curriculum committee is composed of the directors of all the courses or curricula organized for the education of occupational therapists. The committee on student affiliations includes one representative from each of the school councils and fourteen members-at-large selected by the chairman. The committees on graduate study and scholarships are more limited in their membership. The council on education has fourteen members appointed and elected from the four above-mentioned committees. The total number of persons involved in educational problems including registration is approximately eighty.

The clinical procedures committee has six sections, namely: psychiatry, physical disabilities, tuberculosis, pediatrics, general medicine and surgery, and administration. This large group has produced the manual, "Objectives and Functions of Occupational Therapy," which is constantly

being revised and added to by the steadily working groups.

Several committees have sub-committees such as the conference appraisal, of the permanent conference, or the personnel policies for the national office which is a sub-committee of the executive committee.

There are also the following standing committees of the House of Delegates: nominating, and credentials. Special committees on house budget, group insurance, malpractice and treatment fees function regularly.

Other special committees are appointed from time to time, some continuing their work for several years, others functioning for only brief periods for the handling of particular problems.

There are three bodies which act as advisory or related groups. Of these the first, the medical advisory committee, is composed of physicians who are representatives of their several national associations which are most closely related to our own. The seven members represent psychiatry, orthopedics, physical medicine, surgery, internal medicine, tuberculosis and pediatrics. This council meets once a year at the time of the national conference but its members are always individually available for advice. The American Medical Association's committee on occupational therapy education consists of representatives from the medical specialties, some of them the same persons who serve on the medical advisory committee, and three occupational therapists chosen by the AMA representatives from persons whom we suggest.

The interdisciplinary study group was formed after the Allenberry conference and has continued to function since that time. It is composed of representatives of recreation, manual arts, and the like who constitute the total group of activity or adjunctive workers.

It is easy to see that so extensive and complicated a structure as this, which does not include groups involved in special grants, can become confused and unwieldy. Standard operating procedures have been set up for each standing committee and guide lines are constantly being laid down for special procedures. We need however to be vigilant to see that changes are clear and specific, that regular reports are required and that the machinery is overhauled from time to time.

An important group, the development committee, has been working for several years to study what we have accomplished, where we are now and what our future aims are and should be. You will hear more about this in the future.

Helen S. Willard, O.T.R.
President

From the Education Office

It is with pleasure that the education office announces the names of those examinees who successfully completed the January 30, 1959, registration examination.

Aarons, Sarah P.	*Greenwald, Caroline M.
Allende, Carmen H.	Griffin, Nancy L.
Anderson, Janet A.	Gross, Dellvina M.
Arakawa, Sylvia K.	Gross, Martha A.
Aronow, Marilyn J.	Hanley, Darleen A.
Arps, Jean	Harris, Judith A.
Atkinson, Mary L.	Harris, Margaret H.
Baldus, Susan J.	Harty, Kathleen A.
Banholzer, Marilyn L.	Hays, Jean K.
Barbre, Rochelle	Heck, Germaine M.
Barrett, Margo J.	Hefly, Linda A.
Beeman, Kathleen M.	Hendrickson, Donna D.
Benedict, Loie D.	Hermetet, Mildred E.
Bernstein, Ann E.	Hooker, Charlene J.
Beslock, Carol M.	Houlihan, Katherine E.
Beutlich, Karen F.	Hull, Mary L.
Bezdek, Myrna Lou T.	Hurwitz, Betty L.
Black, Lois C.	Janitell, Eleanor A.
Blumenthal, Fay B.	Jennings, Linda G.
Borderud, Phyllis F.	Jennings, Margaret S.
Boring, Mary Jane	Jochim, Dorothy J.
Bovee, Terry T.	Johnson, Janice L.
Breen, Kathleen E.	Justice, Ruth R.
Brod, Helen	Kajihara, Henry K.
Brooks, Mary Louise	Kasza, Suzanna M.
Bukovac, Ruby P.	Kauffman, Nancy A.
Burke, Alice M.	Kehmeier, Elizabeth W.
Cabrinha, Patricia A.	Kellogg, Sandra L.
Cahn, Marian S.	Kennedy, Patricia M.
Cameron, Marilyn G.	Kessel, Mary A.
Cate, Emily H.	Knapp, Faye
Connolly, Sister Ann	Kubik, Frances C.
Crane, Eleanor P.	Lahr, Kathryn M.
Curtis, Marie L.	Lahvis, Annelore F.
Cutting, Caroline W.	Lamb, Patricia A.
Dahlen, Karen L.	Lane, Ann
Darling, Susan K.	Langhart, Judith E.
Darr, Donald E.	Languit, Salome A.
De Salva, Ines E.	Latimore, Harriet J.
De Silvia, Sandra	Latva, Arlene A.
Drew, Donna T.	Leffel, Suzanne K.
Driver, Christine S.	Leibowitz, Maxine R.
Dunn, Mary Sue	Levine, Deanna E.
Edwards, Edra G.	Lill, Ruth E.
Erger, Elizabeth L.	Lindberg, Kaaren V.
Erickson, Nancy A.	Loar, Barbara Jean T.
*Evans, Myrna M.	Louderback, June B.
Fader, Marjorie L.	Lukes, Shirley A.
Farrell, Elizabeth E.	McKibbin, Elsie H.
Feist, Frances A.	McKiernan, Elsie
Fink, Gilbert L.	McGill, Mary A.
*Fisher, Wilma	MacBain, Kathleen P.
Fitten, Carrie E.	Mahannah, Shelley B.
Frecker, Alice A.	*Mandell, Rhoda S.
Freimund, Esther S.	Mason, Clara E.
Fryberger, Marilyn T.	Maughan, Iselyne V.
Garrabrants, Barbara M.	Meares, Jennifer S.
Germano, Ann P.	Menzer, Marilyn J.
Goad, Anne	Merideth, Mona H.
Gobbie, Matilda M.	Michalski, Marcia M.
Goodwin, Marcia L.	Miller, Janet F.
Gorham, Patricia H.	Mirich, Helen Mae
Grams, Patricia A.	Nester, Marguerite
Green, Nancy B.	Norvell, Laurann

Nunn, Barbara M.	Severson, Sharron F.
O'Loughlin, Kathryn V.	Sherwood, Geraldine L.
Osby, Gretchen	Shimada, Frances S.
Papoutsidaki, Elizabeth	Smith, Jewel E.
Patterson, Judith G.	Smith, Natalie C.
Paulu, Virginia	Sons, Nancy J.
Phillips, Diane	Speed, Jesse C.
Pinckney, Janette V.	Strandin, Susan
Porter, Barbara Ann	Stuart, Myriam
Porter, Patricia G.	Swinson, Evelyn H.
Present, Jean T.	Talbot, Nancy H.
Ragla, Marlene E.	Taylor, Margaret Ann
Rathmanner, Mary Ellen	Terry, Kay G.
Reber, Sue E.	Thimmesch, Pauline
Reece, Ruth M.	Thompson, Ann R.
Rempe, Gloria C.	Toll, Donna R.
Rhoads, Mary Anne	Trautz, Kathleen E.
Ringer, Shirley L.	Trost, Kathleen R.
Roberts, Lorley B.	Tsoucatos, Anna D.
Rogers, Nancy J.	Vetter, Ethel M.
Ross, Marceline P.	Vilulu, Maare
Rousos, Irene C.	White, Mary Lou
Runge, Margaret	White, Nancyjean N.
Sabine, Clark L.	Willer, Helene
*Schlansky, Susan	Williams, Betty S.
Schob, Barbara J.	Williams, Lorraine A.
Schoonover, Myron J.	Williams, Maurine
Schoop, Elaine J.	Wood, Margaret K.
Schutz, Yvonne M.	Wright, Carol H.
Scivier, Elizabeth A.	Young, Jeannette F.
Seidenstricker,	Zoesch, Marian R.
Margaret M.	

*Completed with Honors.

Virginia T. Kilburn, O.T.R.
Director of Education



Miss Beatrice Wade, O.T.R.

A REPORT OF DACOWITS 1959

Secretary of Defense Neil McElroy has appointed Miss Beatrice D. Wade, O.T.R., head of the department of occupational therapy in the College of Medicine at the University of Illinois, as one of eighteen new members to serve on the Defense Advisory Committee on Women in the Services (DACOWITS). These eighteen women will serve for three years on the DACOWITS, a 50-member civilian committee established by the Secretary of Defense in 1951.

The committee advises the Department of Defense on policies and standards affecting all women in the Services and conducts a public education program in behalf of all women in the Army, Navy, Air Force and Marine Corps.

Although the fields of interest represented by this group include nursing, dietetics, occupational therapy, physical therapy, journalism, radio and television, education and business, members serve on the DACOWITS as individuals rather than as official representatives of any profession or organization.

Miss Wade reports that her initial association with the members of this committee proved to be a most stimulating experience. It enhanced

her respect for civic and professional women leaders in the country; she was particularly impressed with the outstanding quality, character and leadership possessed by the directors of the nine divisions of Women in the Services, one of whom is Colonel Ruth Robinson, AMSC, and former president of the American Occupational Therapy Association. Members of DACOWITS departed from their meeting feeling confident that young women selected for membership in the Armed Services are privileged to be directed by the aforementioned directors.

The need for women in the Armed Services is based on a two-fold requirement for them in peacetime.

First is the requirement for the services to maintain a nucleus of trained women in uniform who would be expected to provide the leadership and military experience in the event of mobilization or an emergency.

Second is the requirement of the Services for the most competent and skilled people available to them to help maintain a strong and increasingly technical defense force. Both of these requirements demand highly qualified women with the capacity to acquire new skills and a broad knowledge of military jobs.

The officers and enlisted women now on duty in the four Services provide a nucleus of women immediately responsive to an emergency while individually they are adding to the skills needed in the Armed Forces. To keep that nucleus the Services must recruit approximately 10,000 enlisted women and commission approximately 450 women officers each year.

During the recent sessions in Washington, four subcommittees considered items related to: (1) medical services, (2) organization, (3) professional education, (4) public information surveys.

Miss Wade, as the only occupational therapist holding membership at this time, was assigned to the subcommittee on medical services.

Included in the list of distinguished speakers on the program were the Honorable Neil McElroy, Secretary of Defense and his assistant secretary, Honorable Charles C. Finucane. A dynamic discussion of moral leadership was stimulated by Captain John O. Minor, USN, and Lieutenant J. J. O'Connor, Ph.D., USN. The committee formulated recommendations related to housing for recruits and methods of interpreting the function and the recruitment needs of the Armed Services to the public which are referred to the Office of Defense for consideration and possible implementation. At the same time, each member of DACOWITS assumes the responsibility of creating public acceptance of Military Services for women as a career opportunity and as citizenship responsibility.

At the conclusion of the formal meeting, Miss Wade and other new DACOWITS members, made an all-day visit to the Women in the Navy at the U.S. Naval Training Center at Bainbridge, Maryland.

Readers who wish more detailed information regarding DACOWITS are referred to AJOT, Vol. X, No. 6, 1956, for a report by Miss Elizabeth Messick, O.T.R., who served on the committee from 1956-1959.

Last year the Junior League of Indianapolis established a scholarship of \$1,000 annually for five years in honor of Mrs. Winifred C. Kahmann, O.T.R., for her leadership and service at Riley Hospital.

This year the Riley Memorial Association has established another scholarship of \$5,000 for the Indiana University occupational therapy program on the occasion of her retirement after thirty-five years of service from the Riley Memorial Hospital and the Indiana University Medical Center.

AJOT, XIII, 3, 1959

AOTA Conference

MORRISON HOTEL

Chicago, Illinois

Pre-conference meetings, October 15-18

Conference, October 19-23

Chicago welcomes you in 1959, and the program is planned to be of interest to all. Some of the highlights of the conference are briefly outlined. More details of the program will appear in the August issue of AJOT.

Behavioral aspects of disability is one general subject. The patient and his problems are uppermost in the treatment and the success of the rehabilitation program. Subjects which will be considered in this area are: the patient's reaction to disease; the effect his disability will have upon his family; and the adjustment to his personal ambitions and interests. In addition, the personality development of the patient will be studied. Discussion will focus on the personality structure as it has emerged as a result of progressive adaptations to biological, social, educational, and spiritual experience.

Treatment procedure clinics will present twenty topics of vital interest to all occupational therapists. Each topic will be repeated two or three times so as to be available to all attending. For the most part, medical experts and practicing occupational therapists, experienced in the treatment procedure, will lead the discussions.

Some of the topics to be considered are: "Motivation, its Psychodynamics and Function in Occupational Therapy," "Energy Costs of Activity," "Geriatric Programming," and treatment procedures with emotionally disturbed children and aphasic adults.

Disaster planning is a concern of every hospital and clinic. This portion of the program will consider the need for civilian disaster planning and the role of the occupational therapist in such planning. A panel, consisting of a hospital administrator, a physician, a member of the Civilian Defense Program, and an occupational therapist will discuss this very interesting and timely subject.

Legal aspects of treatment in occupational therapy will delineate the concerns of this all important subject as it affects every practicing occupational therapist. It is a widely publicized subject in which therapists should be well versed.

Following is a partial list of speakers:

Charles U. Letourneau, M.D., who is director of the program for hospital administration, Northwestern University, Evanston, Illinois.

Irene Josselyn, M.D., from the Institute for

Psychoanalysis, Chicago, and clinical professor of psychiatry at the University of Illinois, Chicago.

Professor O. Hobart Mowrer, Ph.D., from the department of psychology, University of Illinois, Urbana.

Morris Fishbein, M.D., who is the former editor of the *Journal of the American Medical Association*.

Edward E. Gordon, M.D., who is the director of physical medicine and rehabilitation, Michael Reese Hospital, Chicago.

G. Margaret Gleave, O.T.R., who is executive director of the Curative Workshop, Racine, Wisconsin.

Janet Anderson, O.T.R., who is supervisor of occupational therapy at Michael Reese Hospital, Chicago.

Mary Reilly, O.T.R., who is a doctoral student at the University of California, Los Angeles.

Muriel E. Zimmerman, O.T.R., who is conducting research on the self-help devices for the Institute of Physical Medicine and Rehabilitation, New York City.

Lottie V. Blanton, Capt., AMSC, occupational therapist at Letterman Army Hospital, San Francisco, California.

Monday through Thursday the program will be conducted at the hotel with plenty of interest to all. Friday will be devoted to field trips, so plan this day to see the departments in the Chicago area of interest to you.

And don't forget to allow time to visit the commercial and educational exhibits. Their schedule will appear in the preliminary program.

GRADUATE COURSE

A work conference on the vocational rehabilitation of the psychiatric patient to be held July 6 to 24, 1959, is offered by Teachers College, Columbia University.

The focus of the conference will be on the problems and rehabilitation of the mental patient during his post-hospital adjustment.

The course, open to occupational therapists as well as other professional workers, may be taken for academic credit if desired.

For further information, apply to:

Dr. Abraham Jacobs
Box 35
Teachers College
Columbia University
New York 27, N. Y.

Editorial

FURTHER ACTION

The battle has not been won with the discovery of the Salk vaccine. In 1958 there was a 44% increase in the incidence of paralytic polio over 1957 because four out of seven Americans are not protected. One third of the nation's children under six years of age have not been immunized and 50% of all paralytic polio cases in 1958 occurred in children under five years of age.

Most of the unprotected people are not motivated by national campaigns. It therefore becomes a community problem to reach all parents and assure action. State occupational therapy associations can help on these local campaigns by alerting community leaders, by studying local conditions and by contributing man hours in urging action by community health and welfare councils.

Knowledge is only effective if put to use. And action by state occupational therapy associations in such a vital problem can effectively help to adequately immunize the country.

The results of epidemics are our concern. Let us contribute to prevention effectively by stimulating others to the community vaccination drives and to help launch such drives where none are planned.

Miss Jeannine Dennis, O.T.R., was one of three women to receive the "Women of Science Award" this year from the Medical Center Auxiliary of the University of California at Los Angeles Medical Center.

Miss Dennis was the only occupational therapist to be honored. She is the chief occupational therapist at UCLA's child amputee project. She presented the exhibit from the child amputee prosthetics project at Copenhagen during the conference of the World Federation of Occupational Therapists. At the request of the Danish Congress committee she presented a lecture entitled "A Comprehensive Prosthetics Program for Child Amputees."

Miss Dennis is the delegate from the Southern California OT Association to the AOTA House of Delegates.

Buy From Your
Journal Advertisers

FEATURED OT DEPARTMENTS

LA CLINIQUE DE RECUPERATION FUNCTIONELLE

Les Charmilles
Valenton, France

MARJORIE BALL, M.A., O.T.R.

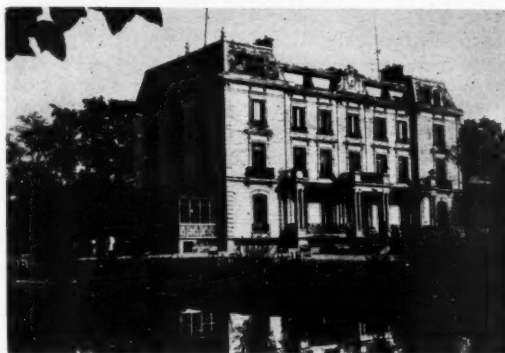


Figure I. The Exterior of Les Charmilles.

The clinic, Les Charmilles, was established in 1950 in a fine old country house, formerly a hunting lodge of Napoleon III (Figure I). It is located in an attractive park of seventeen acres about seven miles from Paris. The main building houses the administrative offices, the physical therapy treatment areas, the rooms and nursing service for sixty-two patients.

Through the Societe Franco-Americaine Atlantique, Les Charmilles offered me a year's employment to establish an occupational therapy service. The center has interested me from the point of view of similarities and differences from American centers. Perhaps you would enjoy sharing some of my impressions.

Outstanding is the feeling of team spirit among the personnel; the warm informality of atmosphere which holds a concern for the psychological as well as the physical needs of each patient. Sympathetic to the American philosophy of rehabilitation is the attention paid to the patient's need for return to his profession and daily life. A check list similar to ADL tests is now part of each patient's record. However, the older records all show notes on specific needs, such as, "lives on third floor, no elevator," or, "railroad worker who must lift heavy weights."

There has been a consistent effort to create an informal but stimulating atmosphere in the center, both through the architecture and interior

decoration and also by the avoidance of strict rules, while at the same time encouraging respect for the customs of the center. The patients are called "residents" and a hospital atmosphere is avoided.

The clinic limits its services to disabilities of the lower extremities: injuries, fractures, amputations, arthroplasties and other surgical procedures, excluding neurological conditions. In 1955 a workshop for making leg prostheses was established. This has permitted better coordination of treatment and fitting of limbs.

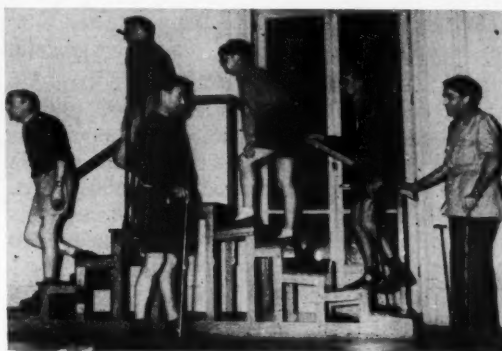


Figure II. Training in Stair Climbing.

The patients are referred by hospitals and doctors in Paris. An especially close relationship is maintained with the clinic of orthopedic surgery of Professor Merle d'Aubigne at the Hospital Cochin and the surgical service of Professor Agrege Cauchoix at the Hospital Saint-Louis. This close cooperation permits the patients to benefit from accurate techniques, continuously followed.

The treatment program is scheduled from 9 A.M. to 5:45 P.M. The morning schedule starts with gymnastics. Patients are divided into groups according to disabilities and sex, and individual gymnastics for general muscle tone are given to bed patients who are not yet weight-bearing. Then follows an hour and a half of specific treatment for range of motion and increase of strength, and an hour and a half of remedial gymnastics for readaptation. This includes practice in stair climbing and gait training, a practical procedure as many Paris stairs are as uneven as photographed in Figure II.

Lunch at 11:30 is followed by a rest period until 2:00 P.M. Each patient follows an individual plan, but as much group work is included as possible which gives the treatment considerable team spirit. In the afternoon there is time to take the patients outdoors for walking over paths graded in varying degrees of difficulty and for taking part in adapted sports and games.

Outside of treatment demands, whether he is in bed or ambulatory, the resident takes part in and often organizes the activities which make the center *l'antichambre de la vie*: parties, musicales, library, entertainers, movies and television. A large recreation room occupies the top floor and is the center for most activities of a social nature. There is a club, *Les Mille Pattes* (The Centipedes), formed by the former residents. They have arranged several large parties and try to include especially those who have residual handicaps and lack other social outlets.

The professional staff, directed by M. Rabeux and M. Michaut, both *kinesithérapeutes* (the latter is in his second year of medical school), includes a general practitioner who makes regular calls, and an orthopedic surgeon, a physiatrist, and a psychiatrist who are consultants. There are ten *kinesithérapeutes* (physical therapists), two nurses, one electro-therapist (the use of diathermy, infra-red, etc., is a specialty separated from *masso-kinesithérapie*). A weekly staff meeting is devoted to topics of professional interest.

For one trained in the United States, the differences appear in the analysis of methods and especially in the terms used. Many words are confusingly similar to English but have different connotations. The word, rehabilitation, in French refers to moral and psychological rehabilitation rather than physical. Thus one finds that rehabilitation centers are called centers of reeducation or *recupération fonctionnelle*. As the program has developed at Les Charmilles, three phases are recognized in treatment: (1) Recupération, referring to recovery of range of motion and of muscle strength. The methods used are generally familiar: movements localized either manually or with the aid of apparatus (pulley therapy similar to the English type), resistance in the form of sandbags accurately graduated in weight, local massage, hydrotherapy and diathermy. (2) Readaptation, referring to use of the movements and strength gained in the first phase or, when necessary, the development of compensatory movements. Remedial gymnastics, adapted games and sports and stair-climbing are used. It is planned to use *ergothérapie* (occupational therapy) in this phase. (3) *Reentrainement à l'effort* means developing endurance. Here

attention is given to the kind of life the patient must lead on his return home. Tests are given of speed and endurance. It is planned that occupational therapy will play an important part in this phase.

The plans for the future envision a new center exclusively for amputees which will serve both upper and lower extremity patients. The new building will include space for *ergothérapie* solely for amputees. Thus within a year there will be two occupational therapy services. The one presently being installed will occupy the glass-enclosed terrace seen in the photo and will treat only lower extremity disabilities.

FUNCTIONING OF A REHABILITATION UNIT FOR TUBERCULOSIS PATIENTS

Cynthia Pryor Coad, O.T.R.*

Ray Wittrig, M.A. **

FOREWORD

In the article (AJOT XI, 1, 1957) "The Function and Value of a Pre-Vocational Unit in a Rehabilitation Center" by Henry Redkey, he stated that construction would begin on 42 comprehensive rehabilitation centers involving the expenditure of private, state and federal funds.

The following article illustrates the work now being done in one of these centers, the center at the State Sanatorium, Oakdale, Iowa, which was established through a federal grant for such construction.

In 1954 the federal government made available to the states and other agencies money to be used for the development of new rehabilitation facilities. It was the responsibility of the individual agencies to secure these federal funds through the presentation of a proposed rehabilitation program, together with blueprints of proposed physical facilities, and a guarantee of fund participation by the agency or state. The administration of the Iowa State Sanatorium at Oakdale recognized the opportunity for the development of comprehensive rehabilitation services at the Sanatorium, and took the necessary steps in filing application for funds for the construction of a rehabilitation wing at the hospital. Subsequently, federal funds were secured which made possible the development of a rehabilitation unit, including additional occupational therapy facilities. The unit at Oakdale opened in December, 1957.

While the primary purpose of this hospital is to diagnose and treat tuberculosis, it is recognized that, in addition to medical care, there are many other factors which relate to the pa-

*Director of occupational therapy, Iowa State Sanatorium, Oakdale, Iowa.

**Rehabilitation counselor assigned to the Iowa State Sanatorium, Oakdale, Iowa.



The view of the rehabilitation wing while under construction. The wheelchair ramp leads from the outdoor recreation area to the main floor of the rehabilitation unit.

tient's progress while in the hospital and after discharge. In this respect, tuberculosis is a disease which is known to impose personality stresses beyond those found in most diseases. Initial diagnosis and hospitalization create many hazards for the patient, both real and imagined. He is frightened by his disease and its possible consequences; he is concerned over his need for extensive treatment, which means separation from family and home; he is faced with the probability of vocational readjustment; his financial security is jeopardized. While the reactions to the various problems differ in the case of each patient, some have a tendency toward mental and physical apathy, the result of an overwhelming complexity of problems. Failure to aid the patient in the solution of these problems may hinder medical treatment and foster psychological conditions which are manifested in social and economic maladjustments after discharge.

The rehabilitation program of this hospital is based upon the philosophy that tuberculous patients should have available those services which will assure them maximum opportunity physically, socially and vocationally upon discharge. To achieve this requires the integrated efforts of the various departments within the hospital organization. This integration is accomplished through mutual understanding of problems and goals, identified by means of techniques common to the various disciplines, and is discussed in regular conferences and consultations among the personnel of the hospital staff. Service usually begins with medical treatment; however, as soon as medically feasible, other services are introduced. The patient is helped to understand his disease and accept the treatment which is recommended; his social situation is evaluated and casework procedures are developed; his vocational capacity and interests are explored and initial planning is begun with tentative objectives established.

As soon as possible after a patient is admitted to the sanatorium and permission for occupational therapy is given by his doctor, he is contacted by a therapist and our purpose is explained to him. Suggestions are made to the patient as to the type of activities his physical condition will allow, and his interests are sought. With team work on the part of the hospital staff, a planned program of activity is begun, either tonic, therapeutic, evaluative, or in combination.

The goals which concern the occupational therapist begin with the desire to help the patient with his adjustment to the hospital routine. This includes helping the patient develop new interests as well as giving encouragement and imparting the feeling that we are concerned with every aspect of his well being. Also we seek to promote a voluntary stay in the sanatorium until medical discharge, by trying to prevent preoccupation with personal problems through the introduction of activities suited to his physical capacity and interests. In some instances the therapists find it necessary to prevent development of withdrawal tendencies on the part of the patient, especially those newly admitted and strictly confined.

In some cases, we are faced with a secondary diagnosis that in itself needs a planned program of therapy. At present we have as prescription patients those with other disabilities in addition to their tuberculosis. Blindness, amputations, mental illnesses, mental deficiencies, and orthopedic problems are some of the diagnoses which require treatment in addition to the program planned to aid in recovery from tuberculosis.

An important goal, receiving special attention in this hospital with the building and equipping of the rehabilitation wing, is that of preparing the patient for the post-hospitalization period, and is aimed specifically at the patient nearing discharge. (The goals cited previously apply primarily to bed patients and to patients with restrictive privileges.) Through the facilities located in this wing, the therapist is able to carry the patient's program further and is able to teach new habits of recreation adjusted to the patient's level of activity. The months spent in the sanatorium lower the patient's work tolerance and in order to regain his endurance, a program of graduated activity is commenced so that he may compete with others in the working world without endangering his health. The therapist is able to give functional aid to the patient's rehabilitation by preparing him for activities required for his ultimate goals; many of the patient's activities in occupational therapy provide a source of information in evaluating his abilities in relation to the practicality of vocational training of a

specific nature. Through conferences with the rehabilitation counselors we are able to deal more effectively with pre-vocational assessment.

The occupational therapy department is able to encourage more continuing tonic or diversional activity in a craft program by the use of a display room for patient-made articles so that their projects are accessible for visitors to purchase. Through this outlet for their articles, and through sales by organizations such as the American Legion Auxiliary, the patients are able to achieve economic gains more easily. This aids the patient in maintaining self-respect and in preventing a feeling of dependence on his family.

The rehabilitation conferences of the sanatorium is structured to provide for the integration of all rehabilitation services. All department directors who are involved in the patient's hospital program participate in this conference. Here the patient is evaluated in his many aspects, and services are planned and integrated, a procedure which has many advantages. Certainly it aids the patient in accepting the terms of his hospitalization and cure. He is stimulated to think of the advantages which accrue, and to take an active part in the hospital program. Fear of vocational readjustment is lessened; new interests and experiences are explored; and interest in training for new jobs or improved skills is developed.

Vocational opportunities provided to patients include evaluation—physical, psychological and vocational; counseling; training in personal adjustment, pre-vocational and vocational areas in special classrooms provided for this purpose; provision for try-out experiences in the sanatorium; placement through employer contacts; referral to appropriate agencies, or assistance in establishing a business; the provision of training or placement after discharge; and follow-up after placement. The coordinated efforts of the many specialists needed is more effective and efficient in the clinical setting. The period of cure may be reduced by maintaining the active interest of the patient, and the time required for return to economic independence is reduced.

Hospitalization becomes a period of re-education and preparation for return to community life. When patients are ready for discharge, they are ready to be trained for suitable employment at specialized schools outside the hospital, or for job placement. Their medical conditions are followed for a period of time to insure that the disease has been arrested.

The rehabilitation unit is easily accessible to the patients, being centrally located on the main floor of this 350 bed hospital. The new facilities for occupational therapy have made it possible to present jewelry making, lapidary work and

ceramics in addition to such crafts as leather, weaving, enameling, needlework and many minor crafts that the department had offered previously. The floor plan, approximately four times the area of the previous occupational therapy and rehabilitation area, includes room for vocational assessment and instruction in the areas of commercial courses, graphic arts, woodworking, electronics and homemaking.

With the start of our present program, three additional wards of 30 patients each are being covered, which brings our total number of wards covered by tonic occupational therapy to ten, or an average of 300 patients each week; two thirds of this number is seen twice a week. An average of nine patients are treated daily for specific secondary disabilities, mental and physical. Those patients making use of the occupational therapy workroom have doubled in number over those accommodated in the smaller area previously provided.

Our present staff consists of two registered therapists, the rehabilitation counselor, a vocational psychologist, a full-time occupational therapy aide, and four part time instructors in vocational areas.

The hospital also serves a teaching function. Senior medical students and rehabilitation counseling students from the State University of Iowa receive specialized training and practical experience in the modern treatment and total rehabilitation of the tuberculosis patient. Many colleges and universities send their occupational therapy students here for their tuberculosis clinical affiliation; and foreign occupational therapists may benefit from a training period in this unit prior to taking the examination for occupational therapy registration in this country.

Mention should also be made of anticipated programs, geared to the changing hospital population. In addition to those patients who can be rehabilitated for competitive employment, it is recognized that more and more the sanatorium must serve as a custodial institution for the chronically ill who require constant medical supervision. These patients are not necessarily physically unable to work. The need for a sheltered workshop for these patients is recognized; it is the hope of the staff that some type of organized program can be provided to afford opportunity to these patients for financially rewarding work. Efforts will be made to develop this type of program within the rehabilitation activities of the hospital. In addition, an expansion of the present program of services to a wider range of patients is a goal.

AOTA Committees

Standing Committees

CIVIL DEFENSE COMMITTEE

Chairman to be appointed.

CLINICAL PROCEDURES COMMITTEE

Lottie Blanton, Capt., AMSC, Chairman
Letterman Army Hospital
San Francisco, Calif.

Committee to be appointed.

CONFERENCE APPRAISAL COMMITTEE

Robert E. Belyea, O.T.R., Chairman
Institute of Living
400 Washington St., Hartford 2, Conn.

Members

Clyde W. Butz, O.T.R., Norwich, Conn.
Mrs. Bess Lande, O.T.R., New Haven, Conn.
Bertha Piper, O.T.R., Hartford, Conn.

COUNCIL ON EDUCATION

Angeline A. Howard, O.T.R., Chairman
Dept. of Occupational Therapy
University of Southern California
Los Angeles 7, Calif.

Members

Sister Mary Arthur, O.T.R., Milwaukee, Wis.
Ruth Brunyate, O.T.R., Reisterstown, Md.
Elizabeth Collins, O.T.R., Iowa City, Iowa
H. Dwyer Dundon, O.T.R., Omaha, Nebr.
Marjorie Fish, O.T.R., *ex officio*, New York City
Elizabeth Fuchs, O.T.R., Oakland, Calif.
Catherine Hoffman, O.T.R., Winfield, Ill.
Virginia Kilburn, O.T.R., *ex officio*, New York City

Rosalia Kiss, O.T.R., Kalamazoo, Mich.
Cornelius Kooiman, O.T.R., Ft. Collins, Colo.
Barbara Loomis, O.T.R., Chicago, Ill.
Martha Matthews, O.T.R., St. Louis, Mo.
Henrietta McNary, O.T.R., Milwaukee, Wis.
Leland Miller, O.T.R., Rockford, Ill.
Janet Stone, O.T.R., Los Angeles, Calif.
Caroline Thompson, O.T.R., Madison, Wis.
Beatrice Wade, O.T.R., Chicago, Ill.
Helen Willard, *ex officio*, O.T.R., Philadelphia, Pa.

Rena Worthington, O.T.R., Denton, Texas
Elizabeth Yerxa, O.T.R., Long Beach, Calif.

SUBCOMMITTEES

CURRICULUM COMMITTEE

Rena C. Worthington, O.T.R., Chairman
School of Occupational Therapy
Box 3718, University Hill Station
Denton, Texas

Members

Elizabeth Fuchs, O.T.R., Oakland, Calif.
Mrs. Francis Herrick, O.T.R., Ypsilanti, Mich.
Barbara Jewett, O.T.R., Detroit, Mich.
Martha Matthews, O.T.R., St. Louis, Mo.
Martha Schnebly, O.T.R., New York City

GRADUATE STUDY COMMITTEE

Cornelius Kooiman, O.T.R., Chairman
Occupational Therapy Department
Colorado State University
Fort Collins, Colorado

Members

Virginia Barr, O.T.R., Los Angeles, Calif.
Frieda Behlen, O.T.R., New York City

Robert Bing, O.T.R., College Park, Md.
Shirley Bowing, O.T.R., Seattle, Wash.
H. Dwyer Dundon, O.T.R., Omaha, Nebr.
Dorothy Ericson, O.T.R., New York City
Alice Jantzen, O.T.R., Gainesville, Fla.
Barbara Jewett, O.T.R., Detroit, Mich.
Rosalia Kiss, O.T.R., Kalamazoo, Mich.
Patricia Laurencelle, O.T.R., Indianapolis, Ind.
Eleanor Mann, O.T.R., San Jose, Calif.
Carolyn Thompson, O.T.R., Madison, Wis.
Mary Van Gorden, O.T.R., Duluth, Minn.
Ruth Whipple, O.T.R., Denton, Texas

STUDENT AFFILIATION COMMITTEE

Elizabeth Yerxa, O.T.R., Chairman
47B 57 Place
Long Beach, California

Members

Naida Ackley, O.T.R., Trenton, N. J.
Susan S. Barnes, O.T.R., St. Louis, Mo.
Margaret M. Bishop, O.T.R., Philadelphia, Pa.
Grace Black, O.T.R., Portland, Ore.
Ruth Brunyate, O.T.R., Reisterstown, Md.
Betty Mae Caseman, O.T.R., Redwood City, Calif.
Virginia Caskey, O.T.R., Indianapolis, Ind.
Eileen Dixey, O.T.R., Concord, N. H.
Dorothy Elliott, O.T.R., Detroit, Mich.
Jean Ehrenhaft, O.T.R., Iowa City, Iowa
Catherine Hoffman, O.T.R., Winfield, Ill.
Jean Kraft, O.T.R., Jamestown, N. D.
Jessie Lawson, O.T.R., Kansas City, Kans.
Helen Powell Lindley, O.T.R., Detroit, Mich.
Barbara Loomis, O.T.R., Chicago, Ill.
M. Louise McMillen, O.T.R., Waco, Texas.
Anne Murany, O.T.R., San Jose, Calif.
Chloe Nelson, O.T.R., Denver, Colo.
Josephine Osborne, O.T.R., St. Paul, Minn.
Miriam Plank, O.T.R., Ypsilanti, Mich.
Cecilia Sattley, O.T.R., Bronx, N. Y.
Elizabeth Shepard, O.T.R., Boston, Mass.
Clarence Sicard, O.T.R., Minneapolis, Minn.
Myrla Smith, O.T.R., Sherman Oaks, Calif.
Lyla Spelbring, O.T.R., Ann Arbor, Mich.
Janet Stone, O.T.R., Hondo, Calif.
Mrs. Marion K. Thill, O.T.R., Milwaukee, Wis.

HISTORY COMMITTEE

Mrs. Marianne Catterton, O.T.R., Chairman
Box 232, Route 4
Annapolis, Md.

Member

Mrs. Madelaine Ellis, O.T.R., Crownsville, Md.

INTERNATIONAL COMMITTEE

Marie Louise Franciscus, O.T.R., Chairman
Columbia University
630 W. 168 St., New York, N. Y.

Members

Marguerite Abbott, O.T.R., New York City
Jeannine Dennis, O.T.R., Los Angeles, Calif.
Marjorie Fish, O.T.R., New York City
Helen S. Willard, O.T.R., Philadelphia, Pa.

LEGISLATION AND CIVIL SERVICE COMMITTEE

Virginia Caskey, O.T.R., Chairman
Larue D. Carter Memorial Hospital
Indianapolis, Ind.

Members

Edna Faeser, O.T.R., Indianapolis, Ind.
Wilma Franz, O.T.R., Indianapolis, Ind.
Ruth Grummon, O.T.R., Indianapolis, Ind.
Mrs. Winifred Kahmann, O.T.R., Indianapolis, Ind.

NOMINATING COMMITTEE

Mary Van Gorden, O.T.R., Chairman
Duluth Rehabilitation Center
101 N. First Ave. E., Duluth 2, Minn.

Members

Jeannine Dennis, O.T.R., Los Angeles, Calif.
Mrs. Luba Faris, O.T.R., Seattle, Wash.
Jerry Johnson, O.T.R., Alton, Ill.
Eileen O'Hearn, O.T.R., Jamaica Plain, Mass.
Mrs. Irene Robertson, O.T.R., Houston, Texas

PERMANENT CONFERENCE COMMITTEE

Mrs. Winifred Kahmann, O.T.R., Chairman
3440 N. La Salle St.
Indianapolis 18, Ind.

Members

Frieda Behlen, O.T.R., New York City
Marjorie Fish, O.T.R., New York City
Catherine Hoffman, O.T.R., Winfield, Ill.
Irene Hollis, O.T.R., New York City
Virginia Kilburn, O.T.R., New York City
Helen C. Mathias, O.T.R.
Lucie S. Murphy, O.T.R., Milwaukee, Wis.
Laurel V. Nelson, O.T.R., St. Paul, Minn., Co-Chairman
Florence Stattel, O.T.R., New York City
Beatrice Wade, O.T.R., Chicago, Ill.
Wilma West, O.T.R., Rochester, N. Y.
Helen S. Willard, O.T.R., *ex officio*, Philadelphia, Pa.

RECOGNITION OF THE OCCUPATIONAL THERAPY ASSISTANT COMMITTEE

Marion W. Crampton, O.T.R., Chairman
Boston School of Occupational Therapy
7 Harcourt St., Boston, Mass.

Members

Virginia L. Caskey, O.T.R., Indianapolis, Ind.
Mrs. Veronica C. Dobranske, O.T.R., Boston, Mass.
Ruth A. Robinson, Col., AMSC, Washington, D. C.

RECOGNITIONS CHAIRMAN

Florence Stattel, O.T.R., Chairman
National Society for Crippled Children and Adults
55 W. 42 St., New York, N. Y.

Members

Mary Britton, O.T.R., Decatur, Ill.
June Sokolov, O.T.R., Hartford, Conn.
Caroline Thompson, O.T.R., Madison, Wis.

RECRUITMENT AND PUBLICITY COMMITTEE

Mrs. Frances L. Shuff, O.T.R., Chairman
Bronx Municipal Hospital
New York, N. Y.

Regional Chairmen:

East: Capt. Gertrude Murray, AMSC, Washington, D. C.
North: Dorothy Hruby, O.T.R., North Riverside, Ill.
South: Ruth Whipple, O.T.R., Denton, Texas
West: Bernadine Choren, O.T.R., Los Angeles, Calif.

School Representatives

Columbia University: Mrs. Adelaide Deutsch, O.T.R., Englewood, N. J.
Boston School: Acile Harrison, Boston Mass.
Philadelphia School: Mrs. Virginia Cute, O.T.R., Philadelphia, Pa.

Members

Arizona—Mrs. Frances Breitner, O.T.R.
Arkansas—Ruth Melsheimer, O.T.R.
California, Northern—Bernadine Choren, O.T.R.
California, Southern—Annette Ingram, O.T.R.
Colorado—Virginia Gordon, O.T.R.
Connecticut—Irene Obrock, O.T.R.
Delaware—Mae D. Hightower, O.T.R.
District of Columbia—Alice Howe, O.T.R.
Florida—Christine Haukland, O.T.R.
Georgia—Bettye Hedges, O.T.R.
Hawaii—Mrs. Samuel Kamaka, O.T.R.
Illinois—Mrs. Deborah Brocker, O.T.R.
Indiana—Mrs. James Mahan, O.T.R.
Iowa—Jack Dack, O.T.R.
Kansas—Mrs. Jessie Lawson, O.T.R.
Kentucky—Mrs. Nancy Lampport, O.T.R.
Louisiana—Mrs. Ruth Metcalfe, O.T.R.
Maryland—Mary K. Joss, O.T.R.
Massachusetts—Mildred E. Poli, O.T.R.
Michigan—Mildred F. Etter, O.T.R.
Minnesota—Mary Schroepfer, O.T.R.
Mississippi—Mrs. Betty White, O.T.R.
Missouri—Susan Barnes, O.T.R.
Nebraska—Caroline Pliska, O.T.R.
New Jersey—Roberta Schaeffer, O.T.R.
New York—Jane E. Fogelsonger, O.T.R.
North Carolina—Florence Bearden, O.T.R.
North & South Dakota—Mrs. Marlys Mitchell, O.T.R.
Maine, New Hampshire, Vermont—Virginia Bell, O.T.R.
Ohio—Karl Ireland, O.T.R.
Oklahoma—Mrs. Jane Medley, O.T.R.
Oregon—Mrs. Joyce Beals, O.T.R.
Pennsylvania—Mrs. Virginia W. Cute, O.T.R.
Pennsylvania, Western—Mrs. Mona J. Durgin, O.T.R.
Puerto Rico—Maria I. Ponton, O.T.R.
Rhode Island—Mrs. Ella Sherbert, O.T.R.
South Carolina—Barbara Wilkinson, O.T.R.
Tennessee—Martha Miles, O.T.R.
Texas—Mrs. Jane F. Sims, O.T.R.
Utah—Mrs. Alice Peden, O.T.R.
Virginia—Mrs. Marguerite Arledge, O.T.R.
Washington—Shirley Bowing, O.T.R.
Wisconsin—Mrs. Marion Thill, O.T.R.

SPECIAL PROJECT FUND COMMITTEE

Elizabeth Collins, O.T.R., Chairman
State University of Iowa
Iowa City, Iowa

Members

Arkansas—Mrs. Dorothy Marsh, O.T.R.
Southern California—Carlotta Welles, O.T.R.
Northern California—To be Appointed
Colorado—Russell Mosier, O.T.R.
Connecticut—Patricia Plaisted, O.T.R.
Washington, D. C.—Mrs. Arvilla D. Merrill, O.T.R.
Florida—Mrs. Takoohy Leedy, O.T.R.
Georgia—Muriel Driver, O.T.R.
Honolulu—Joyce Wong, O.T.R.
Illinois—Mrs. Clyde Hollowell, O.T.R.
Indiana—To be Appointed
Iowa—Joyce Thornberry, O.T.R.
Kansas—Eber Burgess, O.T.R.
Kentucky—Mrs. Bette Nylund, O.T.R.

Louisiana—Garnet Hines, O.T.R.
 Maine—Jacquelin Wright, O.T.R.
 Maryland—Mrs. Marion Dana, O.T.R.
 Massachusetts—Eileen O'Hearn, O.T.R.
 Michigan—To be Appointed
 Minnesota—Mary Van Gorden, O.T.R.
 Mississippi—To be Appointed
 Missouri—Mrs. Frances Singer, O.T.R.
 Nebraska—H. Dwyer Dundon, O.T.R.
 New Jersey—Mrs. Lucille Boss, O.T.R.
 New York—Lois Silsby, O.T.R.
 North Dakota—William French, O.T.R.
 Ohio—Mrs. Rachel Stevenson, O.T.R.
 Oklahoma—Linson Beavers, O.T.R.
 Pennsylvania—Elizabeth Whitaker, O.T.R.
 Western Pennsylvania—To be Appointed
 Puerto Rico—Mrs. Sol Hado de Janquera, O.T.R.
 Tennessee—To be Appointed
 Texas—Mrs. Rena Worthington, O.T.R.
 Utah—To be Appointed
 Virginia—Mary Blayne, O.T.R.
 Washington—To be Appointed
 Wisconsin—Irene Grant, O.T.R.

SPECIAL STUDIES COMMITTEE

Julie Werner, O.T.R., Chairman
 University of California
 Los Angeles 24, Calif.

Members

Patricia Holser, O.T.R., Los Angeles, Calif.
 Margaret Orchard, O.T.R., Los Angeles, Calif.
 Mary Reilly, O.T.R., Los Angeles, Calif.
 Beverly Troyer, O.T.R., Alhambra, Calif.

SUBCOMMITTEE ON NATIONAL OFFICE PERSONNEL POLICIES

Naida Ackley, O.T.R., Chairman
 New Jersey State Hospital
 Trenton, N. J.

Members

Marjorie Fish, O.T.R., *ex officio*, New York City
 Ethel Huebner, O.T.R., Trenton, N. J.
 Clare Spackman, O.T.R., Philadelphia, Pa.
 Helen Willard, O.T.R., *ex officio*, Philadelphia, Pa.
 Wilma West, O.T.R., Rochester, N. Y.

Special Committees

CONSTITUTIONAL REVISION COMMITTEE

Ruth Zieke, O.T.R., Chairman
 Veterans Administration Hospital
 Oteen, N. C.

Members

Elizabeth Collins, Iowa City, Iowa
 Margery Peple, Richmond, Va.
 Elizabeth Withers, St. Louis, Mo.

DEVELOPMENT ADVISORY COMMITTEE

Wilma West, O.T.R., Chairman
 1873 Portland Ave.
 Rochester 17, N. Y.

Members

Mary Britton, O.T.R., Decatur, Ill.
 Elizabeth Jameson, O.T.R., Broadview, Ill.
 Shirley Lewis, O.T.R., Topeka, Kans.
 Martha Matthews, O.T.R., St. Louis, Mo.
 Florence Stattel, O.T.R., New York City
 Beatrice Wade, O.T.R., Chicago, Ill.

OCCUPATIONAL THERAPY MANUAL FOR PHYSICIANS

Marguerite Abbott, O.T.R., Chairman
 Columbia University
 New York, N. Y.

Members: Editorial Review

Marie Louise Franciscus, O.T.R., New York City
 Patricia Holser, O.T.R., Los Angeles, Calif.
 Alice A. Ingram, O.T.R., Los Angeles, Calif.
 Henrietta McNary, O.T.R., Milwaukee, Wis.
 Clare S. Spackman, O.T.R., Philadelphia, Pa.
 Beatrice D. Wade, O.T.R., Chicago, Ill.
 Mrs. Elizabeth M. Wagner, O.T.R., New York City
 Wilma L. West, O.T.R., Rochester, New York
 Helen S. Willard, O.T.R., *ex officio*, Philadelphia, Pa.

Authors

A. Jean Ayres, O.T.R., Los Angeles, Calif.
 Maryelle Dodds, Capt., AMSC., Denver, Calif.
 Muriel Driver, O.T.R., Warm Springs, Ga.
 Mrs. Antoinette W. Gilder, O.T.R., Encino, Calif.
 Mrs. Clare S. Glasser, O.T.R., New York City
 Irene Greer, O.T.R., Denton, Texas
 Ruth Grummon, O.T.R., Indianapolis, Ind.
 Barbara H. Jewett, O.T.R., Detroit, Mich.
 Eleanor C. Kille, O.T.R., New York City
 Barbara Loomis, O.T.R., Chicago, Ill.
 Mrs. Isobel Robinault, O.T.R., New York City
 Mrs. Ellen Roose, O.T.R., Topeka, Kansas
 Elizabeth H. Smedes, O.T.R., Long Island, New York
 June Sokolov, O.T.R., Hartford, Conn.
 Thelma L. Wellerson, O.T.R., New York City

PREVOCATIONAL EVALUATION COMMITTEE

Chairman to be Appointed.

REVISION OF ADMINISTRATIVE PRACTICES AND PERSONNEL POLICIES

Mrs. Elizabeth Jameson, O.T.R., Chairman
 Illinois Association for the Crippled, Inc.
 816 E. Edwards St., Springfield, Ill.

Members

Mrs. Mary Alice Coombs, O.T.R., Austin, Texas
 Evelyne Eichler, O.T.R., St. Paul, Minn.
 G. Margaret Gleave, O.T.R., Racine, Wis.
 Mary Frances Heermans, O.T.R., Chicago, Ill.

REVISION OF MANUAL ON DEPARTMENTAL ORGANIZATION AND ADMINISTRATION

Cornelia Anne Watson, O.T.R., Chairman
 4045 Pine St.
 Philadelphia 4, Pa.

Members

Mrs. Esther P. Castle, O.T.R., Honolulu, Hawaii
 Mrs. Mary Alice Coombs, O.T.R., Austin, Texas
 Evelyne Eichler, O.T.R., St. Paul, Minn.
 Irene Hollis, O.T.R., New York City
 Ruth Robinson, Col., AMSC., Washington, D. C.
 Margaret Rood, O.T.R., Los Angeles, Calif.
 Martha Schnebly, O.T.R., New York City
 Anita Slominski, O.T.R., Indianapolis, Ind.
 Mrs. Adelaide R. Smith, O.T.R., Tucson, Ariz.
 Viola Svensson, O.T.R., West Haverstraw, N. Y.
 Mrs. Elizabeth Wagner, O.T.R., New York City
 Mrs. Alberta D. Walker, O.T.R., Los Angeles, Calif.

Wilma West, O.T.R., Rochester, N. Y.

Consultants

Mary Reilly, O.T.R., Los Angeles, Calif.
 Virginia Niles, O.T.R., Hines, Ill.
 Capt. Lottie Blanton, O.T.R., San Francisco, Calif.
 Naida Ackley, O.T.R., Trenton, N. J.

In Memoriam

Mrs. Mary L. Abbey
Los Angeles, California
Deceased, December 6, 1958

Miss Florence Fulton
Philadelphia, Pennsylvania
Deceased, March 17, 1957

Miss Linda Graydon
Washington, D. C.
Deceased, February, 1959

Miss Frida Johansen
New York, New York
Deceased, October, 1958

Mrs. Alice W. Jurden
Richmond, Virginia
Deceased, Summer, 1958

Miss Alma Pierce
Wallingford, Connecticut
Deceased, November 22, 1958

Mrs. Sylvia Sears Rider
Buffalo, New York
Deceased, Summer, 1958

Miss Pauline Ryscuck
Albany, New York
Deceased, late 1958

Miss Carrie M. Stoner
Chicago, Illinois
Deceased, December 6, 1958

Calendar of Events

June 21-26, 1959
Annual Conference of the
American Physical Therapy Association
Hotel Leamington
Minneapolis, Minnesota

August 20-September 5, 1959
Annual Meeting of the
World Federation for Mental Health
Barcelona, Spain

October 16-23, 1959
Annual Conference of the
American Occupational Therapy Association
Hotel Morrison
Chicago, Illinois

November 30-December 2, 1959
Annual Meeting
American Academy for Cerebral Palsy
Hotel Statler
Los Angeles, California

August, 1960
International Congress of Physical Medicine
Washington, D. C.

August 28-September 2, 1960
World Congress International Society for the
Welfare of Cripples
New York City

September, 1960
World Federation for Occupational Therapists
Council
Australia

DELEGATES DIVISION

MICHIGAN

Delegate-Reporter, Marjorie Holtom, O.T.R.

The *MOTA Bulletin*, which is published four times a year, is the official communication organ of the Michigan Occupational Therapy Association. It describes the activities of the three districts and the two annual meetings; it provides sidelights and information from the three schools in Michigan; and it lists aims and actions of the Board of Management and the committees of the association.

One of the persisting problems of the Michigan Association is to increase the number of active members. Our recruitment and publicity committee has stepped up its campaign and at the present time there are 92 active, 14 sustaining, 23 associate, and 1 honorary member. Within the State there are 173 occupational therapists who are working, 118 who are not working, and 41 associated personnel who are working. This potential keeps us striving toward a 100% membership goal. In 1958 Michigan awarded its first honorary membership to Marion R. Spear, O.T.R. This was an award of recognition for her many years of pioneering leadership in the field of occupational therapy.

Professional participation by the Michigan Occupational Therapy Association included co-sponsorship of the 11th annual Michigan Rural Health conference (January, 1958), membership on the planning committee of the annual physical therapy-occupational therapy workshop, and as a participating agency in the 11th annual Conference on Aging (June, 1958).

Committee activity has reached a new high during the past year. The recruitment and publicity committee revamped and re-issued the recruitment bulletin on occupational therapy in Michigan. They collected colored slides from each district to become a nucleus for recruitment lectures and displays. Each district was encouraged to make a bulletin board for a traveling exhibit which could be set up in any high school or other public place. These display boards have already been used on a number of occasions to exemplify occupational therapy. At the suggestion of this committee Michigan appointed a therapist to act as a public relations coordinator.

Our research committee has tackled a number of projects, the most ambitious being research into sources of financial aid which would pertain to occupational therapy students in Michigan. This resulted in a scholarship brochure listing more than 75 sources of assistance. Five thousand copies have been printed and are being distributed to prospective students. This committee sought reactions of occupational therapy students and therapists, through an opinion poll of the entire state, regarding a standardized student

arm patch. Results are being made available to interested persons. In the hopes of eventually making a recruitment film of occupational therapy in Michigan, the research committee surveyed the costs and procedures involved in such a project. Finally, the research committee wrote to all therapists within the State asking for information on proposed research projects and on those currently being conducted.

Though the work of the scholarship committee the Michigan Occupational Therapy Association awarded a \$100 scholarship to a student from each of the three occupational therapy schools in Michigan.

Our history committee has collected material depicting the history of occupational therapy in Michigan and has sent much historical information to the American Occupational Therapy Association.

In the future, Michigan looks forward to establishing a medical advisory board, to additional participation with allied professions in conducting workshops and meetings, to contacting organizations such as Blue Cross, United Community Services, boards of education, etc., in order to establish a better understanding of the scope of occupational therapy, and, lastly, we look forward to being the hosts for the 1961 annual conference of the American Occupational Therapy Association.

OFFICERS

President	Lyla Spelbring, O.T.R.
Vice-President	Josephine C. Moore, O.T.R.
Secretary	Margaret Kirchman, O.T.R.
Treasurer	Dorothy Kiger, O.T.R.
Delegate	Marjorie Holtom, O.T.R.
Alternate Delegate	Dean Tyndall, O.T.R.

ILLINOIS

Delegate-Reporter, Honora Salmon, O.T.R.

The Illinois association is presently in the process of preparing to be host to the American Occupational Therapy Association in October. This naturally has added duties in some areas and curtailed other functions of the ten standing committees within the association.

The membership committee, directed by Ellen Harenburg, has prepared some very effective publicity for the state association. A series of three letters was sent to all known therapists in the state, first inviting them to the meetings, then giving them information on how to become a member and finally telling them of what they gain and can give to their state and national organizations. Miss Catherine Hoffman, local conference chairman, in contacting all therapists in the area to ask their help in preparing for the conference, has stimulated interest in the state association and has aided in increasing membership.

Statistics from an extensive survey of the occupational therapy departments in the state have been accumulated by the public education committee. Leaflets listing the person in charge of these departments, the address and telephone number, are available at all meetings at which the state association has an exhibit. They may be obtained by contacting the chairman of the committee, Fred Sammons, 444 S. Kensington, La Grange, Illinois. The leaflets are useful for informing doctors within the state of the location of departments they might wish to use for their patients.

The committee on district formation has temporarily dispensed with state-wide meetings for the proposed districts. However, active members of these proposed districts have been asked to serve on one or more of the ten local planning committees for the coming conference.

The finance committee has planned a combination style

show and card party as one of its fund raising events. Fashions designed by handicapped people in the area, as well as those available at local stores, will be modeled.

The program committee under the direction of Laura Braunel, planned a varied schedule for the nine yearly meetings. The following subjects have been presented by speakers in the area: "Recreation for the Handicapped," "Rehabilitation for the Ex-convict," "Functional Hand Splints: Their Construction and Use." Two meetings have been reserved for planning and reporting on committee work done for the national conference in October. Other meetings are used for the delegate's report after the annual conference, the annual business meeting and yearly reports, and the social meeting.

The local planning committee joins me in inviting you to visit us in October for the national conference in Chicago. The program committee wishes to thank all who helped in planning the conference by replying so promptly to the questionnaire (mailed with the Newsletter) concerning areas of treatment to be considered.

OFFICERS

President	Camille A. Moore, O.T.R.
President Elect	Dorothy Jeffrey, O.T.R.
Secretary	Helen Bullock, O.T.R.
Treasurer	Janet Anderson, O.T.R.
Delegate	Honora Salmon, O.T.R.
Alternate Delegate	Peggy E. Hollowell, O.T.R.

NEW JERSEY

Alternate Delegate-Reporter, Lucille Boss, O.T.R.

The outstanding program of the New Jersey Association in 1958 was an all-day institute, held in May at New Jersey's newest state hospital at Ancora, and was concerned with two subjects: "Problems of the Aging" and "Occupational Therapy and Vocational Rehabilitation." Occupational therapists, rehabilitation counselors, nurses and representatives from other interested groups attended from New York and Pennsylvania as well as New Jersey.

A total of four meetings were held, including two combined business and social meetings and a joint program with the New Jersey Physical Therapy Association on "Current Trends in Polio Rehabilitation" at the Kessler Institute, West Orange.

The recruitment committee was active in providing speakers at seven career-day projects and in following up by mail lists of guidance directors and potential students secured through the national office.

Many members attended the national conference in New York City in October, at which time the New Jersey delegate, Ethel Huebner, O.T.R., was elected to serve as speaker of the House for the ensuing year. Several members acted on committees in connection with the conference.

The alternate delegate attended an OVR sponsored three-day workshop held at the University of Buffalo in June, when the vocational rehabilitation of the psychiatric patient was discussed by psychiatrists, psychologists, social workers, vocational rehabilitation counselors and other allied members of the rehabilitation team.

Membership in 1958 consisted of 43 active, 11 associate and 4 honorary members.

OFFICERS

President	Fred Odhner, O.T.R.
1st Vice-President	Nancy King, O.T.R.
2nd Vice-President	Louise Tullis, O.T.R.
Secretary	Joan Grunwald, O.T.R.
Treasurer	Mary Birkhead, O.T.R.
Delegate	Ethel Huebner, O.T.R.
Alternate Delegate	Lucille Boss, O.T.R.

Reviews

A NEUROPHYSIOLOGICAL APPROACH TO TREATMENT OF CEREBRAL PALSY: INTRODUCTION TO THE BOBATH METHOD. Sarah Semans, M.A. *The Physical Therapy Review*, Volume 38, Number 9, September 1958.

The author has outlined the neurophysiological aspects of cerebral palsy upon which Dr. and Mrs. K. Bobath have based treatment procedures. Motor learning is considered to be the basic problem of the cerebral palsied child, and it is the immediate concern of the physical therapist. The presence and persistence of abnormal tension patterns produces a double handicap. Not only is there a loss of function of the damaged areas, but this loss blocks a normal development of function of the undamaged areas.

The Bobaths have developed procedures to inhibit tonic reflexes by positioning the body and as hypertonus decreases to facilitate postural control and easy movement. Inhibition and facilitation are used together to assist the child in accomplishing functional activities at this developmental level.

—Maryelle Dodds, Major, AMSC, M.A.

ENAMELING ON METAL. Oppi Untracht. New York: Greenberg, 1957, \$7.50. 175 pp.

COPPERCRAFT AND SILVER MADE AT HOME. Karl Robert Kramer and Nora Kramer. New York: Greenberg, 1957, \$7.50, 175 pp.

Two books which teach metalcraft the modern way through illustrations and photographs with a minimum of reading material. A limited amount of equipment is required so that both books are excellent references for occupational therapy departments with limited facilities or uninterested in acquiring a great deal of equipment.

LATIN-AMERICAN DANCE BOOK. Betty White.

New York: David McKay Co., 1958, \$3.75, 149 pp.

A fun book that clearly describes the latest dance steps. The chapters are so arranged that the student can progress from the simple to the more advanced figures and are so well illustrated that an occupational therapist can master the formations for easy instruction for a group activity.

GLOVE TOYS. Margaret J. Hutchings. New York: Studio Crowell, 1958, \$3.95. 71 pp.

The young delight in playing with puppets and people of any age delight in making them, so this book is a good addition in any occupational therapy department. The patterns and ideas for glove puppets are varied and ingenious and will no doubt inspire many therapists to make as well as teach others to make glove toys. The book includes puppets for special holidays as well as ideas for character portrayal.

A TUBERCULOSIS SANITARIUM SURVEYS ITS CHANGING POPULATION. Katherine Reid. *Journal of Rehabilitation*, May-June, 1958.

The rehabilitation department of the Municipal Tuberculosis Sanitarium in Chicago has recently completed a study comparing the characteristics of the 1957 patient population with that of 1952. The purpose was to test the hypothesis that major changes have occurred and to provide a basis for evaluating, in the light of the present patients' needs, the services now being provided.

Four groups were included in the study: Males 1952

and 1957; Females 1952 and 1957. Many significant changes were recognized:

1. *Age.* Males under 50 declined from 71 per cent to 47 per cent. Females under 30 declined from 82 per cent to 69 per cent.

2. *Ethnic groups.* White males increased 4 per cent; negroes declined 5 per cent. White females declined 4.5 per cent; negroes increased 3 per cent.

3. *Marital status.* The unmarried group of males over 40 years increased from 16 per cent to 35 per cent; the unmarried group of females declined from 26 per cent to 18 per cent.

4. *Education.* Sixty-five per cent males reported from 0-8 years schooling. Thirty per cent males reported from 1-4 years high school. Forty-six per cent females reported 0-8 years schooling. Fifty per cent females reported 1-4 years high school. Four per cent females reported some college.

5. *Occupational level.* A general decline in occupational level was noted. Professional, semi-professional and managerial declined 3.6 per cent; skilled labor declined 11 per cent; semi-skilled labor increased 4 per cent; unskilled labor increased 5.5 per cent; unemployed class increased 5.6 per cent.

6. *Time in sanitarium.* In 1953 the Sanitarium adopted a policy of discharging suitable cases to continue treatment in out-patient clinics and this has resulted in a marked decrease in long-term patients.

7. *Alcoholism.* One in three white male patients and one in five negro male patients have been diagnosed as chronic alcoholics. The known incidence of chronic alcoholism in female patients was 7.5 per cent.

8. *Employment outlook for male patients* (excluding students). In 12.7 per cent, good; 16 per cent, fair; 13.3 per cent, doubtful; 13.6 per cent, poor; 42.3 per cent, unemployable.

Under modern conditions in the tuberculosis area, problems of adjustment within the sanitarium and on discharge are many. Current trends in the treatment of the tuberculous aim both to conquer the disease and to prepare the patient to re-enter normal living constructively and intelligently. When these aims have been met, pertinent objectives will have been accomplished.

This entire article should be of great interest to all who work in the tuberculosis field.

—Minnie F. Witham, O.T.R.

SCHIZOPHRENIA. Manfred Sakel, M.D. New York: Philosophical Library, 1958, 335 pp. \$5.00.

The treatment of schizophrenia through the use of insulin "as a neurotropic drug," was accomplished by the research and discoveries of the late Dr. Manfred Sakel. The prevalence of schizophrenia is regarded as "the greatest single problem in psychiatry." Part I deals with etiology, symptomatology and psychopathology of schizophrenia and explains how man's mind gradually attained higher levels of functioning, accompanied by emotional and instinctual processes. These mental endowments expanded as cultural behavior evolved and various psychological studies concerning human responses and frustrations have revealed new knowledge about psychiatric disturbances. Part II relates the technique of administering insulin shock therapy; the discovery and development of the treatment process; physiological and psychological reactions in cases that have been clinically observed; indications for "wet shock" or "dry shock," and the neurological "tug of war" between the sympathetic and vagal "ends" of the autonomic nervous system when hypoglycemia occurs during the course of treatment.

Dr. Sakel did not consider his success with this effective

treatment as the final solution to the problem of schizophrenia. He said, "What I am attempting to explain now cannot even be called a theory. At most, I should like to refer to it as a working hypothesis which has helped me to plan and elaborate further the method of treatment in all its ramifications. But, even though the accumulation of clinical fact seems to substantiate the hypothesis, we cannot stop here but must continue to search for further hypotheses which might provide a more solid basis for the facts."

—Bertha J. Piper, O.T.R.

DYNAMIC ASPECTS OF OCCUPATIONAL THERAPY. E. D. Wittkower, M.D., and H. Azima, M.D. *Archives of Neurology and Psychiatry*, 79:6 (June) 1958.

This article is devoted to a critical analysis of psychiatric occupational therapy and to some suggestions for enlarging its scope. Evidence is given to show that the low prestige of occupational therapists in some mental hospitals is due both to the insufficiency of their contribution and to insufficient appreciation of their contribution. The authors cite inadequate psychiatric training for occupational therapists, lack of a theoretical basis for occupational therapy, and lack of research to support a theoretical basis as causes for this low prestige. Suggestions are made for the utilization of occupational therapy along psychodynamic concepts. The belief is stated that the dynamic formulation of occupational therapy should make use of the three related theories of instincts, of mental structure, and of object-relations. The authors have utilized the last two concepts in developing two particular therapeutic procedures, "projective group therapy," and "object relations therapy," which are briefly described.

—Isabel C. Hahn, 1st Lt., AMSC

DEAFNESS, MUTISM AND MENTAL DEFICIENCY IN CHILDREN. Louis Minski, M.D. New York: Philosophical Library, 1957, \$3.75.

Material for this excellent text has been drawn directly from the experiences with and observations of children in a clinical and residential setting in England. It provides the reader with many helps for gaining insight and understanding of the differences and factors involved in delayed speech development in individuals having one or more of the conditions named. It offers specific guides to aid the therapist in delineating particular problems and gives numerous suggestions for their correction. The contents include some aspects of the problem in general, an overview of clinical data, some methods of assessing the individual problem, use of audiometry, psychological tests, and a general discussion of the overall problem.

The form of presentation is tight and concise, affording the reader much factual material in little reading time. This book would be highly desirable for therapists who are concerned in any way with problems of speech and hearing.

—Eleanor C. Kille, O.T.R.

REHABILITATION MEDICINE. Howard A. Rusk, M.D. St. Louis, Mo.: C. V. Mosby Co., 1958, 572 pp., \$12.00.

Thirty-seven collaborators of Howard A. Rusk in the department of physical medicine and rehabilitation, New York University-Bellevue Medical Center, have compiled this worthwhile book. Dr. Rusk believes the book will serve as a basic elementary text and a useful reference for all physicians. It will also serve as an important reference for every member of the rehabilitation team.

The first part of the book deals with principles of re-

habilitation medicine while the last part deals with the application of these principles. Every major aspect of rehabilitation is covered in this book in a clear concise manner. Even lay personnel would find this book easy and interesting reading.

The chapter dealing with principles of occupational therapy includes a section on prevocational evaluation. Six separate areas of the vocational counseling process were discussed briefly. These were assessment, counseling, occupational information, training, job placement and follow-up. Unfortunately this section does not define the role and responsibility of the occupational therapist in these processes. The occupational therapist, or as used in this section, the prevocational therapist, certainly can be of aid to the vocational counselor, but the "how" is perhaps something that our profession must yet work out.

—Lester M. Brower, M.A., O.T.R., R.P.T.

INTRODUCTION TO PSYCHIATRIC NURSING.

Marion E. Kalkman, R.N., M.A. New York: McGraw-Hill Book Company, Inc., 1958, 331 pp. Second edition.

To keep abreast with the trend of dynamic psychiatry and the increasing emphasis on empathetic communication, the author revised the first edition of this very fine textbook for student nurses. It is divided into two broad categories: scientific information and interpersonal therapeutic concepts. Numerous subtitles in each chapter enhance the readability of the contents.

The material includes psychological development of the personality, psychiatric disorders, mental mechanisms, and somatic therapies; also, the value of occupational therapy, social therapy, and psychotherapy; and a wealth of professional advice regarding attitudes and techniques. This reviewer regrets, however, that the subject of progressive *work treatment* procedure is not adequately defined. A chapter on occupational and industrial therapy would have more forcibly manifested the author's conviction that "Occupational therapy is just as much a part of his (the doctor's) treatment as his medications and psychiatric interviews."

The concluding statement in the foreword, written by Karl M. Bowman, M.D., Professor of Psychiatry Emeritus, University of California, School of Medicine, says, "This book can be read profitably not only by the beginning psychiatric nurse but also by the psychiatrist and all others who work with psychiatric patients." The appendix contains a nurse-patient relationship study, the American Psychiatric Association's Classification of Psychiatric Disorders, and film titles, descriptions, and sources.

—Bertha J. Piper, O.T.R.

BALANCE TRAINING IN CEREBRAL PALSY: PRINCIPLES AND PROCEDURES. Helen C. Spencer, B.A. *The Physical Therapy Review*, 37:8 (August) 1957.

The first part of this article deals with general considerations of balance training such as the psychological and physiological reasons why balance training is more difficult in cases of cerebral palsy than in poliomyelitis or paraplegia. Overcoming patients' fear, aids in balance training, stimulating the interest of the patient, dealing with disturbances from outside sources and other factors are discussed.

The second part includes more specific procedures of balance training, not as an orderly system of exercises, but rather as balance training techniques for the therapist to have at his disposal. Techniques given in some detail are head and sitting balance, quadruped and kneeling activities, erect activities with and without support, and crutch and cane activities.

—Maryelle Dodds, Major, AMSC, M.A.

REHABILITATION OF THE AGED AMPUTEE.

Bror S. Troedsson, M.D. *Geriatrics*, 13:3 (March) 1958.

Along with the increased incidence of arteriosclerotic obstructive disease has come a corresponding increase in amputations among the aged. The Veterans Administration Hospital in Minneapolis has a prosthetics appliance team organized to handle the complicated problems involved in rehabilitation of these patients. The team is composed of an orthopedic surgeon, a physiatrist, a corrective therapist, an occupational therapist, a social service worker, a vocational counselor, and prosthetists representing limb manufacturers. The team objectives are to shorten the patient's hospital stay (thereby lessening the drain on his financial resources), to fit him with a suitable prosthesis, restore him to maximum activity, guide him to suitable work or occupation, and place him in a suitable environment. Five case histories are given, each illustrating a typical problem which may be encountered. The first case history is given in conference form to show how each individual team member contributes to the evaluation and management of the patient.

—Isabel C. Hahn, 1st Lt., AMSC

GROUP PSYCHOANALYSIS. B. Bohdan Wassell, M.D. New York: Philosophical Library, 1959, \$3.75, 306 pp.

A description of the psychoanalytic group method used in the treatment of personality disorders. The book focuses on the value of psychoanalysis and the particular value of group analysis. "In group psychoanalysis the patient can find his true individuality, that individuality which in our time seems to be losing its substance under growing pressures toward adjustment and conformity."

While not deprecating individual therapy, Dr. Wassell feels group analysis has many benefits for some patients and may be combined with individual analysis advantageously for others.

CLASSIFIED ADVERTISING

Classified advertising accepted for POSITIONS WANTED and POSITIONS AVAILABLE only. Minimum rate \$3.00 for 3 lines; each additional word ten cents. (Average 56 spaces per line). Copy deadline first of each month previous to publication.

University Hospital at Saskatoon, Saskatchewan, Canada, now has vacancies for occupational therapists in rehabilitation and psychiatric areas. New 535 bed progressive teaching hospital. Departments offer additional training under medical supervision in all fields. Salary \$265 to \$362.50 depending on qualifications and experience. Benefits include three weeks annual holiday with pay and three weeks sick leave per year. Applications should be directed to the Personnel Office.

Occupational therapist staff position, preferably some experience in cerebral palsy. Outpatient center, all ages, offering physical therapy, occupational therapy, speech therapy and special education. Some student training program. Annual four weeks paid vacation. Hours: 8:30 to 4:00, Monday through Friday. Salary open. Apply: Miss Modenna M. Brossard, R.P.T., Coordinator, 502 W. Mistletoe Avenue, United Cerebral Palsy Treatment Center, San Antonio, Texas.

Chief Occupational Therapist

Words like these apply to the special interest areas of the O.T. Department of Children's Hospital—

Broad scope (general, medical, surgical, pediatrics, physical disabilities).

Ward and shop programs. In and out patients. Student training program.

O.S.U. teaching affiliation.

Recreation program.

For the position of Chief Occupational Therapist, we do not want the impossible—but we do want a person interested in further creative development of these programs. Probably you would need at least three years of experience for maturity in conducting the affairs of a department with this breadth.

Apply at the Personnel Department, Children's Hospital, Columbus, Ohio.

Occupational therapist staff position will be available about June 15, 1959, at the Psychiatric Institute of the University of Maryland Hospital. This is a sixty bed unit accommodating persons of various diagnostic categories, from psychoses to psychosomatic illnesses. Recent graduate therapists will be considered. For further details contact Mr. Roman Nagorka, OTR, Director OT and RT Department, Psychiatric Institute, 645 W. Redwood Street, Baltimore 1, Maryland.

Immediate opening for registered occupational therapist at university medical center department of psychiatry. Modern teaching hospital with 54 beds. Work in close cooperation with psychiatric training program. Well equipped facilities. Situated in small university town with unusual cultural and recreational facilities. Salary \$3516 to \$4312. Three weeks paid vacation plus holidays, two weeks sick leave and benefits. Write for details and applications to George C. Ham, M.D., Chairman, Department of Psychiatry, University of North Carolina, Chapel Hill, N. C.

OTR's wanted immediately for psychiatric positions in both the adult and children's sections of Allentown State Hospital. OT-I salary \$4,329-\$5,529. Graduation OT school required. OT-II salary \$4,773-\$6,090, minimum two years' experience. Benefits include: civil service status, retirement plan, three weeks vacation, thirteen paid holidays, liberal sick leave policy. Write: Patient Activities Coordinator, Allentown State Hospital, Allentown, Pa.

Occupational therapist, registered, staff level; interested in working with amputees, polios, paraplegics, cerebral palsy and related diagnoses. Rehabilitation hospital with present bed capacity of 65 beds. Planning now underway for expansion of in-patient and out-patient facilities. Progressive personnel policies. Salary commensurate with experience and training. Apply Administrator, Eastern N.Y. Orthopaedic Hospital-School, Inc., 124 Rosa Road, Schenectady 8, New York.

Occupational therapists for California state hospitals. Progressive program presents opportunities for imaginative, resourceful therapeutic activities. OTR works as member of professional team toward goal of total rehabilitation of the individual patient. Requires registration with national registry of American Occupational Therapy Association. Pleasant working conditions; excellent merit system and employee benefits. Write for details to State Personnel Board, 801 Capitol Avenue, Sacramento, California.

Occupational therapists (staff) interested in positions in Indiana, write to Sophia Lindahl, Placement Service I.O.T.A., 3000 W. Washington, Indianapolis 22.

Edmonton, Alberta, Canada. Female registered occupational therapists wanted for positions in modern rehabilitation clinic for the industrial disabled, which has been in operation since 1953. Gross monthly income \$260.00 to \$315.00, which includes cost-of-living bonus adjusted quarterly. Pension plan in effect. Medical and hospitalization benefits available. Working conditions: eight-hour day, five-day week, annual leave with pay. Further details on request. Applicant requested to furnish details as to training, qualifications, experience, etc., to Dr. J. R. Fowler, Medical Director, Rehabilitation Clinic, Workmen's Compensation Board, Edmonton, Canada.

Wanted: Registered occupational therapist II (director), salary \$4,472 to \$5,564, depending on qualifications. Relatively new department with growth possibilities. Paid vacation, sick leave, legal holidays, excellent retirement system, group life insurance. Apply: Peter W. Bowman, M.D., Supt., Pineland Hosp. & Training Center, Box C, Pownal, Maine.

Immediate openings for registered occupational therapists and graduates of approved schools eligible for registration, in 2000 bed chronic disease hospital affiliated with New York Medical College. Positions available in children's rehabilitation (primarily cerebral palsy), adult rehabilitation, and ward program. Five day week, four weeks paid vacation, eleven holidays, twelve days sick benefit. Salary \$3750-4830. Write Mrs. Carolyn Aggarwal, OTR, Bird S. Coler Hospital, Welfare Island, New York 17, N. Y.

Immediate placement for registered, qualified occupational therapists in rapidly expanding physical medicine and rehabilitation institute serving two hospitals, total 1,000 general medical and surgical beds, in largest centrally located industrial center in Illinois. Experience in supervisory position and in comprehensive rehabilitation center necessary. Write: Administrator, Institute of Physical Medicine and Rehabilitation, 619 North Glen Oak Avenue, Peoria, Illinois.

Positions available for staff occupational therapists as of July, 1959, for 200 bed psychiatric hospital in Queens, New York. Present staff of 7 therapists ultimately expanding to 12 therapists for intensive treatment program. Salary \$4140 to \$5180 depending upon experience, 4 weeks vacation, blue cross, annual increments, 5 day week. Write Eileen K. Fischer, Director, O.T. Dept., Hillside Hospital, 57-59 263rd St., Glen Oaks, New York. Phone, Fieldstone 3-7800.

Do OT's exist? This hospital has unusual advantages to offer members of this vanishing species—a liberal, OT-minded administration; modern occupational therapy building, fully equipped, but not fully staffed; up-to-date living quarters, complete maintenance \$316. per year; large student training program; wide range of craft supplies and activities; a growing program that is outgrowing the present staff; salary—interesting and adjustable; automatic yearly increments; paid vacations, holidays, and sick time; 40-hour week; health insurance, and retirement plans, plus social security; vital statistics—state, psychiatric, 3000-bed, average patient stay 3 months, A.M.A. accredited. Are you interested? Contact Mrs. Virginia Holmberg, OTR, Connecticut State Hospital, Middletown, Connecticut.

OCCUPATIONAL THERAPISTS AND SUPERVISORS

urgently needed by the
Washington State Department of Institutions

Supervisor, Occupational Therapy.....\$5652-6732 yr.
Senior Occupational Therapist\$4764-5652 yr.
Occupational Therapist\$4368-5184 yr.

Washington State's expanding mental health program offers to Occupational Therapists eligible for registration by the American Occupational Therapy Association the opportunity for professional development and personal gratification in a fast moving and dynamic research program, a program backed by growing public enlightenment. PLUS, benefits derived from Civil Service status; promotion by merit, job security, retirement plan, sick and annual leave, and paid holidays.

For more detailed information contact:

Washington State Personnel Board,
212 Gen'l Adm. Bldg., Olympia, Washington

Position for director of occupational therapy, 1800 bed psychiatric hospital. Civil service, retirement plan. Salary \$5529-8163 depending on qualifications. Write: Patient Activities Coordinator, Allentown State Hospital, Allentown, Pa.

Occupational therapist wanted, 200 bed general hospital, located in South Jersey within 15 mile radius of Philadelphia. Some experience in geriatric program necessary. Salary open, 40 hour week (5 days) employee benefits. Apply in writing, giving practical and educational background to Camden County General Hospital, Blackwood Post Office, Lakeland, New Jersey.

Two staff OTR's needed for expanding program in a progressive training center for mentally retarded and epileptic. Scope of OT includes treatment of physical disabilities and emotional disturbances, as well as help in initial adjustment to institution and ADL. Two new buildings, congenial staff of 8; flexible program, which is medically supervised. Meals, laundry and medical care furnished. University of Florida and Medical School in same town; beaches within 100 mile radius. Write to: Mr. R. C. Philips, Superintendent, Sunland Training Center, P.O. Box 508, Gainesville, Florida.

Openings available for staff and supervisory occupational therapists in Minnesota's mental health program—salary \$4440 to \$6072 dependent on experience. Vacancy for rehabilitation therapies supervisor, \$5400 to \$6564—degree plus several years of supervisory experience. Personnel Director, Dept. of Public Welfare, 117 University Ave., St. Paul 1, Minnesota.

Opening for occupational therapist in expanding treatment center. Work with adults and children. Paid vacation and sick leave. Five day week. Social Security. Apply: Junior Service League Orthopedic Center, 1219 Dunn Avenue, Daytona Beach, Florida.

Opening for occupational therapy director. Registration but no experience necessary. 10 OT's in department; 1200 bed mental hospital. Salary \$4,980 to \$5,496. Full maintenance on grounds at \$30.00 per month for employee. 42-hour week, liberal holiday, vacation and sick leave. Contact Ted O. Irwin, Coordinator of Adjunctive Therapies, Box 589, Larned, Kansas.

Registered occupational therapist with training and experience in industrial arts, for well-equipped occupational and pre-vocational department in new rehabilitation center. Salary open. Liberal vacation and sick leave benefits. Nearby recreational areas. Apply Superintendent, Idaho Elks Rehabilitation Center, 204 Fort St., Boise, Idaho.

Career opportunities for registered occupational therapists. Senior occupational therapist—\$4750-\$6178. Occupational therapist—\$4309-\$5599. Treatment program with acute psychiatric patients, civil service benefits; location near Princeton—accessible to New York and Philadelphia; reasonable maintenance if desired. Apply: Harold E. Miller, Personnel Director, N. J. Neuro-Psychiatric Institute, Box 1000, Princeton, N. J.

Position available Sept. 1st for OTR in a pre-school cerebral palsy and handicapped children's clinic. No experience necessary. Starting salary \$4,700.00, with annual increases. One month vacation, holidays, 22 days paid sick leave and laundry. Hours 9 to 4, Monday through Friday. Contact Mrs. Margaret G. Hogan, Director, Cerebral Palsy Training Center, City Hospital, 25 Park Ave., Binghamton, New York.

Chief occupational therapist in a well established rehabilitation center, located in an outstanding medical college. Plans for expansion. Salary range \$5400-6720. Available immediately. Write to: F. W. Mulcahy, Administrator, Baruch Center of Physical Medicine, Medical College of Virginia, Richmond 19, Virginia.

Staff position for registered occupational therapist or eligible graduate. Rehabilitation department of 400 bed tuberculosis hospital. Pleasant suburban area near excellent transportation and shopping facilities. 40 hour week, paid vacation and holidays, liberal sick leave, retirement plan. Attractive room optional at \$45.00 monthly. Clinical affiliations, active district OT association. Ample opportunities for further education in local universities. Write: Miss Joyce D. Field, O.T.R., Rehabilitation Dept., Sunny Acres Hospital, Cleveland 22, Ohio.

Registered occupational therapist—three openings—state mental hospital—liberal employee benefits. Housing facilities available. Starting salary \$4750—\$238 yearly increment for six years or \$4309—\$215 yearly increment depending upon experience. Preference given to New Jersey residents. Contact John E. Ellingham, Personnel Director, Ancora State Hospital, Hammonton, N. J.

Position for staff occupational therapist in an expanding 100-bed rehabilitation hospital. Additional 48-bed wing will be opened in the fall. Occupational therapy program stresses functional therapy and offers, in addition to the regular clinic, a well equipped housekeeping area and an industrial workshop for extended research and evaluation. Please contact Miss Frances Hume, O.T.R., Gaylord Hospital and Sanatorium, Wallingford, Connecticut.

OTR needed immediately to head department in 180-bed geriatric institution. New OT facilities to be included in new addition now in planning stage. New graduates acceptable. 3-weeks paid vacation, sick leave, holidays, 40-hr. week, meals. Salary \$4800.00 to \$5400.00. Write: Administrator, River Bluff Nursing Home, N. Main Road, Rockford, Illinois.

Registered occupational therapist for supervisor's position in a 1150 bed psychiatric hospital, active and expanding rehabilitation program. Salary \$4147-\$4976 maximum reached in 3½ years. For further information write: R. A. Chittick, M.D., Supt., Vermont State Hospital, Waterbury, Vermont.

OCCUPATIONAL THERAPISTS

required by

PSYCHIATRIC SERVICES BRANCH
SASK. DEPT. OF PUBLIC HEALTH

SALARY RANGES:

Supervisory positions \$350-\$426 per month

Non-supervisory positions \$300-\$364 per month

GENERAL INFORMATION: There is an opening for a department head in the Saskatchewan Hospital, North Battleford. There are several openings for therapists in the Saskatchewan Hospitals at North Battleford and Weyburn and in the Saskatchewan Training School, Moose Jaw. Employment as an occupational therapist with the Psychiatric Services Branch ensures:

A feeling of active, total participation in a progressive program;

An opportunity to know and understand patients well and to have the satisfaction of observing programs;

Professional working relationships in a team composed of a considerable number of professional disciplines including psychiatry, social work, and nursing.

APPLICATIONS: For forms and further information write to the Personnel Officer, Dept. of Public Health, Provincial Health Bldg., or the Public Service Commission, Legislative Building, Regina, Sask., Canada. Refer to file number 5831.

Georgia Warm Springs Foundation

GRADUATE COURSE

Physical Therapy and Occupational Therapy In the Care of *Neuro-Muscular Disease*

This course is open to graduates of approved schools of physical and occupational therapy. Such graduates must be members of the American Physical Therapy Association and/or American Registry of Physical Therapists, or American Occupational Therapy Association.

Entrance dates: First Monday in January, April and October.

Course I—Emphasis on care of convalescent neuro-muscular disease with intensive training in functional anatomy, muscle testing, muscle reeducation and use of supportive and assistive apparatus. This course is complete in itself.

Course II—Three months duration with course I prerequisite. Emphasis on care of severe chronic physical handicaps with intensive training in resumption of functional activity and use of adaptive apparatus.

In-Service Training Program—Fifteen months duration at salary of \$225 per month plus full maintenance, increasing to \$250 per month at the completion of nine months. This program includes training in course I and II.

Tuition: None. Maintenance is \$100 per month. For scholarship to cover transportation and maintenance for course I and II, contact National Foundation for Infantile Paralysis, Inc., 301 East 42nd St., New York 17, N. Y. (Scholarships require two years of experience.)

For further information contact:

ROBERT L. BENNETT, M.D.
Medical Director

Georgia Warm Springs Foundation
WARM SPRINGS, GEORGIA

Opening for male occupational therapist at the Psychosomatic and Psychiatric Institute for Research and Training of Michael Reese Hospital beginning at once. Job offers opportunity to work with adolescents, young adults and adults in a small, modern, private psychiatric hospital. Many benefits. For information write Personnel, Michael Reese Hospital, 29th Street and South Ellis Ave., Chicago, Illinois.

Immediate placement for registered, qualified occupational therapist in hospital expanding from 350 to 533 medical-surgical beds. Extensive pediatrics program and developing rehabilitation unit and psychiatry division included in hospital service facilities. Progressive administration in a community hospital located in the heart of Cleveland's cultural, scientific and educational area. Salary open. Write Mr. Leon Bernstein, Assistant Director, Mount Sinai Hospital of Cleveland, 1800 East 105th Street, Cleveland 6, Ohio.

Immediate opening for two staff occupational therapists, registered, or eligible for registration. Opportunity to work in established pediatric or general medicine and surgery programs under experienced supervisors. Advantages of correlation with other treatment programs in hospitals of large medical center. Participation in student clinical affiliation program. Salary commensurate with education and experience. Fringe benefits, Blue Cross, Blue Shield, health insurance, retirement and social security plan. Contact—Personnel Director, Indiana University Medical Center, 1100 West Michigan Street, Indianapolis 7, Indiana.

Wanted July 15: staff occupational therapist for outpatient comprehensive rehabilitation program in university setting. Salary commensurate with experience. Apply Executive-Director, Medical Center Rehabilitation Unit, Box 86, Grand Forks, North Dakota.

Connecticut State Chronic Disease Hospital. Two OTR positions immediately available in 275 bed hospital in Hartford vicinity. Living quarters available. Civil service benefits. Salary range \$3840-4740. Apply to Superintendent, Cedarcrest Hospital, Newington 11, Connecticut.

Immediate opening: OT for new and growing department in 200 bed hospital. Treatments given to resident and out-patients with physical disabilities. Hospital is polio center for county. Salary commensurate with experience. Contact: George Brotherton, Administrator, John Peter Smith Hospital, 1500 S. Main, Fort Worth, Texas.

Staff occupational therapist for physical medicine and rehabilitation department of 600 bed general medical-surgical and teaching hospital. Thirty miles from Manhattan—near Long Island recreational areas. Salary \$4210-\$5560, 35 hours per week. Full maintenance \$32 per month, plus other benefits. Write: Dr. H. S. Whiting, Director of PM & R Dept., Meadowbrook Hospital, Hempstead, N. Y.

OTR for 80 bed private psychiatric unit in general hospital. Starting salary \$360 to \$400 monthly depending on experience. Address Administrator, St. Joseph's Hospital, Omaha, Nebraska.

Excellent opportunity for two registered therapists in an established physical disability unit. Anticipates expanding program. In and out-patient center, all ages, variety disabilities, excellent medical supervision. Salary \$4128-\$5160. Write Miss Belue, Physical Medicine Dept., Medical College of Va., 1200 E. Broad St., Richmond, Va.

WORK EVALUATION

Staff therapist for expanding program which specializes in evaluation, through job samples, of work potentials of clients in all disability areas. Work with experienced evaluation staff and with strong vocational rehabilitation counseling staff; participate in new OVR sponsored Research and Demonstration project. Liberal salary, vacation and retirement policies. Write Karl L. Ireland, OTR, Supervisor, Work Evaluation and Occupational Therapy, Vocational Guidance and Rehabilitation Services, 2239 E. 55th St., Cleveland 3, Ohio.

Registered occupational therapist for staff position in 342 bed, AMA accredited general hospital handling acute, geriatric and TB patients. Located in Sonoma County, noted for ideal climatic conditions as well as a wide variety of recreational activities. Civil service status—3 weeks vacation, 11 holidays and adequate sick leave allowed each year. Salary range from \$392 to \$470 per month. Exceptionally qualified candidates may be appointed at a salary step higher than the minimum rate. Contact Sonoma County Civil Service Commission, 2555 Mendocino Ave., Santa Rosa, California.

Occupational therapist: Immediate opening—general hospital—all men patients—psychiatric unit included. The OT department is small enough to afford personal individual patient attention. Duties include basic instruction of affiliate psychiatric nursing students. Salary open. Liberal personnel policies. Address: Administrator, Alexian Brothers Hospital, St. Louis 18, Missouri.

Wanted: male registered occupational therapist to work in expanding program in large, well-equipped pre-vocational department. Salary: \$4100 with yearly increments. Write: Clarence A. Sicard, OTR, Department of Physical Medicine and Rehabilitation, University of Minnesota Hospitals, Minneapolis 14, Minnesota.

Immediate opening for occupational therapist in small open door psychiatric unit. Salary open. Annex to 250 bed general hospital. Northwest Texas Hospital, P.O. Box 1110, Amarillo, Texas.

Two staff positions for registered occupational therapists available due to expanding programs in the geriatrics division and in the tuberculosis service. Paid vacation and sick leave; 13 holidays a year; 40 hour week; starting salary \$3828 with annual increases to \$4620. Write Director of Personnel, Baltimore City Hospitals, 4940 Eastern Avenue, Baltimore 24, Maryland.

Position available in June for OTR. Director of occupational therapy and patient services combined in 80 bed tuberculosis sanatorium. Experience desired. Salary dependent on experience. Maintenance available at nominal fee. Apply to Dr. George H. Phillips, Medical Director, Jackson County Sanatorium, Jackson, Michigan.

Long Island Hospital, the chronic division of the Boston City Hospital, has two positions open for occupational therapists to work with two rehabilitation programs: (1) physical disabilities and (2) alcoholic research. These programs are supervised by doctors who teach at the Boston School of Occupational Therapy. Yale University School of Alcoholic Studies recognizes the alcoholic program. 40 hour week—\$67.75 to \$75.25 per week—vacation—sick benefits—maintenance if desired. Contact Jane Welsh, Supervisor, Occupational Therapy Department, Long Island Hospital, Boston 69, Mass.

Wanted: 4 OTR's to work with physically handicapped children in State of Illinois. Therapists will instruct the family in the carry-over of the therapy program. Salary range: \$5,400 per year for no experience to \$6,300 per year for five years of experience. A \$200.00 increase per year is granted until the maximum of \$7,300 is reached. One month vacation at the end of one year of service, free Blue Cross. Therapist will be furnished with a new station wagon and needed equipment. A \$100.00 petty cash for traveling expenses. If interested write to: Mr. Albert W. Arnold, Executive Secretary, Illinois Elks Association Crippled Children's Commission, Inc., 2750 Lake View, Chicago.

See Oregon and become acquainted with our state during our centennial year activities. Pleasant working conditions for OTR with 1 year experience, to assume direction of department in tuberculosis sanitarium, salary \$4100-\$5000, sick leave and retirement. Full subsistence \$40.00 per month. Just 10 minutes from Salem, our capital city. Write Dr. R. E. Joseph, Superintendent, Oregon State Tuberculosis Hospital, Route 4, Box 28, Salem, Oregon.

Challenging opportunity to coordinate and develop therapy programs in Wisconsin's unique system of small-unit state and county psychiatric hospitals. Progressive total program with emphasis on treatment, community participation and prevention. Progressive personnel standards. State program linked with University of Wisconsin. OTR and four years of professional experience including two at the supervisory level. Start at \$6444. Further details from Leslie A. Osborn, M.D., 1552 University Avenue, Madison 5, Wisconsin.

*A Single Source
for All your
Craft Supplies!*

Send for Free Copy
"ALL CRAFTS"
CATALOG

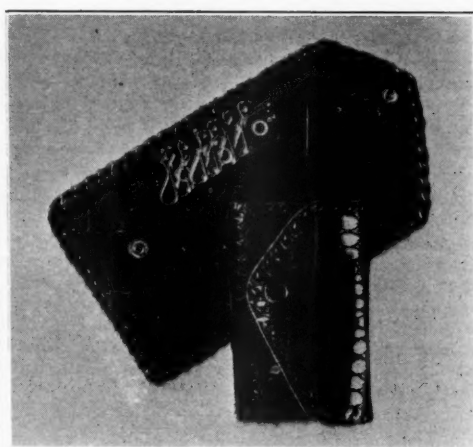


Get our great NEW catalog,
160 big PAGES—Thousands of
items. — Prices reasonable —
Service COMPLETE and
PROMPT, from our large
stocks. Our goal is to fill
EVERY craft need of the Oc-
cupational Therapist — No
matter how unusual, or how
large or small!!

Since 1910

**SAX-CRAFTS—Division of
SAX BROTHERS, INC.**
1111 N. 3rd St.—Dept. OT—Milwaukee, Wis.

LEATHERCRAFT
ENAMELING
WOODENWARE
METALCRAFTS
BASKETRY
CERAMICS
MOSAIC TILE
LAPIDARY
ART SUPPLIES
BEAD WORK
FELT CRAFT
and many others.



Just one of the 100 different items for
your O.T. Dept. Original designs. Low
prices. Send for catalog.

"Makers of the famous Golka Tipping Pliers and
disposable Slim Tips." Makes your lacing work
a pleasure.

ROBERT J. GOLKA CO.

400 Warren Ave.
Brockton, Mass.

**FASCOLE
GLIDE CANE***

DOUBLE LOCK ADJUSTMENTS

To assist patients in mak-
ing the transition from
crutches to regular cane or
where chronic invalids
require more stable sup-
port, the Fascole Glide
Cane is the answer. It pro-
vides maximum stability
and virtually eliminates
balancing problems. May
be used in pairs or singly.
Sturdy all-aluminum with
durable anodized finish, yet
lightweight, only 2 lbs. 4 oz.
Easily adjusts from 30" to
37" by means of push but-
ton and safety friction-lock.
Two glide wheels, two rub-
ber-tipped ends and white
hand-grip.



FASCOLE GLIDE CANE
—list price \$21.00 per
pair. Institutional dis-
counts offered.

*One of many new products to be featured in our forthcoming
80 page Catalog. For your FREE copy write Dept. OT.

FASCOLE CORP. 229 Fourth Avenue,
New York 3, N. Y.

SILK—WOOL—RAYON—LINEN—COTTON—NOVELTY YARNS

20/1 and 20/2 Linen. 19
Beautiful Fast Colors on 4
oz. tubes.

3/2 and 10/2 Fast Colors,
Mercerized Perle Cotton.

2/20 Weaving Worsted.
36 beautiful colors on 2-oz.
tubes. For Warp and Weft.



(Write for free samples)

CONTESSA YARNS Dept. C.W., Ridgefield, Connecticut

8/4 Boil-Fast Carpet Warp
—22 colors on ½ lb. tubes.

Used by Veterans Ad-
ministration in their oc-
cupational therapy pro-
gram.

We have a complete as-
sortment of yarns for
home and commercial
weaving.

Buy Direct
from

BARTLETT YARN MILLS

Established 1821

MILL PRICES

RUG YARNS

Knitting "Homespun," Sport, Baby and worsted yarns

RUG KITS, PATTERNS, HOOPS, FRAMES,
AUTOMATIC HOOKERS
100% WOOL BLANKETS

Institutional discounts for small orders. Wholesale
for large orders.

BOX T

HARMONY, MAINE

LEADING SPECIALISTS RECOMMEND

Thera-Plast®

The ideal, specially processed silicone rubber putty exer-
cising agent for illnesses and injuries to bones, muscles,
tendons and nerves.



STRENGTHENS:

- Fingers
- Hands
- Wrists
- Forearms



Full 2 oz. tin.
At your surgical
dealer. \$2.50

For literature write:

THERA-PLAST CO.
154 Nassau St., New York 38, N. Y.

Make Hands More Creative!

x-acto® CUTTING TOOLS



Hands acquire crea-
tive skill with X-acto
replaceable - blade
knives. Wide assort-
ment of refill cutting
blades plus gouges,
routers, punches and
saws.



New! SAFETY-GUARD knife
with locking sleeve that
covers blade when not in use.

New illustrated book of knives,
tools and handicrafts....25c

X-ACTO, INC.
48-411 Van Dam Street
Long Island City 1, N. Y.



"Exclusive With S & S"

The remarkable new line of reedcraft
kits.

IMPORTED FROM SWEDEN

24 Different models that are guaranteed to put
new life in your craft program.

* * *

LUSTRE TILE IN THREE SIZES

Amazingly low priced, quality ceramic tile in
regular, tiny and "slim jims" sizes. With several
excellent inexpensive tile projects.

* * *

Closeouts on link belts

Terrific bargains on link belt knits not quite up
to our regular high standards.
All these and many more are illustrated in our
new brochure. Send for your copy today.

S & S Leather Co. Inc.

COLCHESTER 44, CONN.

Specialists in handicrafts for the O.T.

New **WONDER TOOL**
Makes Leather Carving
EASY!



Makes
Your Job
Easier

HANDY-CARVE
New, All-In-One TOOL

\$100
ea.
\$10. Doz.

* One tool makes complete leathercraft designs, bevels, shades, decorates and backgrounds • QUIET • no hammering
* Ideal for use in hospitals • EASY for Bed patients to handle, even T.B. patients • HOLD HANDY CARVE JUST LIKE A PENCIL. USE it like a pencil. As easy as writing your name • Adjustable handles may be applied for gross to fine grasping motion • Provides ideal graded activity from bed to clinic • EASY fast results—patient's interest develops and STAYS
* Good for simple instruction to higher education levels • FITS YOUR BUDGET. Low cost. No waiting for tool sets. Start leathercraft therapy sooner • Let them learn with handy carve then progress to stamping tools and conventional patterns.

BILFOLD KIT
Handy Carve Bifold Kit, complete with Precision-cut Quality Leather, Lacing Needle, Leather Finish, Easy-carve pattern Handy Carve TOOL and complete easy instructions . . . (shown above) **\$2⁹⁵**

FREE HELP for Occupational Therapists
100 PAGE LEATHERCRAFT CATALOG
TANDY LEATHER CO. (SINCE 1919)

P. O. Box 791 NH • Fort Worth, Texas.

JUST THE THING YOU WANT

Have a copy of Hammett's Catalog handy . . . it lists and illustrates the latest in occupational therapy materials and supplies. It's free!

LOOMS
Hand or Foot Power

WEAVING MATERIALS
Rug Roving, Cotton Yarn
Carpet Warp, Rug Yarns

BASKETRY MATERIALS
Reed, Raffia, Cane
Wooden Bases and Trays
Corkcraft

ART MATERIALS
Leather and Tools
Books of Instruction

**WRITE FOR YOUR FREE OCCUPATIONAL
THERAPY CATALOG TODAY!**

J. L. HAMMETT CO.
Educational Materials Since 1863
306 Main Street Cambridge, Mass.



**Rayonette
Stole
Magic**

Available again. An Ideal craft for occupational therapy. Simple, interesting and fashionable. Used as a base in weaving stoles, afghans, baby blankets, hot pads, etc. Priced at 34c per yard in 24" width, and available by the 2 yard piece or 50 yard bolt. Also available in 40" width priced at 58c per yard, or 55c per full bolt. Send for swatch, instruction sheet and complete price list.

LEE ADVERTISING SPECIALTY CO.
O.T. Dept., 9006 Joseph Campau, Detroit 12, Mich.

**YOUR MOST DEPENDABLE
SOURCE FOR
OCCUPATIONAL THERAPY
WOOD AND METAL SHOP SUPPLIES**

Write today for our latest catalog and prices

PATTERSON BROTHERS
15 PARK ROW NEW YORK, N.Y.
YOUR MOST DEPENDABLE SOURCE SINCE 1934

FREE!

**THIS
BIG ILLUSTRATED
LEATHERCRAFT
CATALOG**

There is no finer source of materials for Leathercraft projects of all kinds . . . easy-to-assemble kits to enable beginners to make bifold bags, gloves, purses, belts and other attractive items . . . top quality tooling and carving leathers for advanced craftsmen. Also complete line of Leathercraft tools, accessories, supplies and instruction books.

**ATTENTION
METALCRAFT
HOBBYISTS**

Here is a comprehensive illustrated catalog from which you can make your selection of aluminum and copper in sheets and shapes for many projects; copper, aluminum and brass foil for metal tooling; kilns, colors and kits for metal enameling; instruction books, tools and accessories for metalcraft of all kinds.

SEND TODAY FOR FREE CATALOG

J. C. LARSON CO.
820 S. Tripp Ave., Dept. 9011
Chicago 24, Illinois



The leading site of cancer today is the colon and rectum. In 1958, 58,000 new cases were diagnosed.

The present 5-year survival rate for these cancers is less than 30%. This figure could be greatly increased by closing the very wide gap between *actual* and *possible* survival rates.

Earlier diagnosis is an immediate requirement. The American Cancer Society constantly stresses the importance of annual health checkups for all adults, and urges physicians to employ digital and proctoscopic examination of the rectum and colon to find cancer in an early stage.

With your assistance, doctor, in persuading patients to accept these uncomfortable, time-consuming procedures, the gap between actual and possible survival rates could be rapidly closed.

AMERICAN CANCER SOCIETY



Schools Offering Courses in Occupational Therapy

- Boston School of Occupational Therapy, Affiliated with Tufts University, 7 Harcourt St., Boston 16, Mass. *Mrs. John A. Greene, President.*
- Buffalo, University of, School of Medicine, 3435 Main St., Buffalo 14, N. Y. *Asst. Prof. Nancie B. Greenman, O.T.R., Director of Program in O.T.*
- Colorado State University, Fort Collins, Col. *Asst. Prof. Marjorie Ball, O.T.R., Director of O.T.*
- Columbia University, College of Physicians and Surgeons, 630 W. 168th St., New York 32, N. Y. *Asst. Prof. Marie Louise Franciscus, O.T.R., Director of Courses in Occupational Therapy.*
- Eastern Michigan College, Ypsilanti, Michigan. *Assoc. Prof. Frances Herrick, O.T.R., Director of O.T.*
- Illinois, University of, College of Medicine, 1853 West Polk St., Chicago 12, Ill. *Assoc. Prof. Beatrice D. Wade, O.T.R., Head, O.T. Dept.*
- Iowa, State University of, College of Liberal Arts and College of Medicine, Iowa City, Iowa. *Asst. Prof. Elizabeth Collins, O.T.R., Director of O.T.*
- Kansas, University of, Lawrence, Kansas. *Asst. Prof. Leland D. Miller, O.T.R., Director of O.T.*
- Mills College, Oakland 13, Calif. *Miss Elizabeth Fuchs, O.T.R., Director of O.T.*
- Milwaukee-Dowder College, 2512 E. Hartford Ave., Milwaukee 11, Wis. *Prof. Henrietta McNary, O.T.R., Director, Dept. of O. T.*
- Minnesota, University of, School of Medical Sciences, Minneapolis 14, Minn. *Asst. Prof. Borghild Hansen, O.T.R., Director of O.T.*
- Mount Mary College, Milwaukee 10, Wis. *Sister Mary Arthur, O.T.R., Director of O.T.*
- New Hampshire, University of, College of Liberal Arts, Durham, N. H. *Asst. Prof. Anne Henderson, O.T.R., Supervisor of O.T. Curriculum.*
- New York University, School of Education, Washington Square, New York 3, N. Y. *Assoc. Prof. Frieda Behlen, O.T.R., Director, O.T. Curriculum.*
- North Dakota, University of, Grand Forks, N. D. *Asst. Prof. Amy Lind, O.T.R., Director of O.T. Dept.*
- Ohio State University, College of Education, Columbus 10, Ohio. *Assoc. Prof. Barbara Locher, O.T.R., Chairman, O.T. Dept., Un. Hosp., Room 187.*
- Pennsylvania, University of, School of Allied Medical Professions, Philadelphia 4, Pa. *Prof. Helen S. Willard, O.T.R., Director, Phil. School of O.T.*
- Puerto Rico, University of, School of Physical and Occupational Therapy, Professional Bldg., 8th Floor, Santurce, Puerto Rico. *Mr. Esteban Lopez-Fernandez, O.T.R., Technical Director of O.T.*
- Puget Sound, College of, Tacoma 6, Wash. *Assoc. Prof. Elizabeth R. Waggoner, O.T.R., Director of O.T.*
- Richmond Professional Institute, College of William and Mary, Richmond 20, Va. *Miss H. Elizabeth Messick, O.T.R., Director, School of O.T.*
- Saint Catherine, College of, St. Paul 1, Minn. *Miss Catherine Daniewicz, O.T.R., Acting Chairman, Dept. of O.T.*
- San Jose State College, San Jose 14, Calif. *Prof. Mary Booth, O.T.R., Head, Department of O.T.*
- Southern California, University of, College of Letters, Arts and Sciences, Box 274, Los Angeles 7, Calif. *Assoc. Prof. Angeline Howard, O.T.R., Head, Dept. of O.T.*
- Texas Woman's University, Denton, Texas. *Assoc. Prof. Rena Worthington, O.T.R., Director, School of O.T.*
- Washington University, School of Medicine, 4567 Scott Ave., St. Louis 10, Mo. *Asst. Prof. Martha Matthews, O.T.R., Director, Dept. O.T.*
- Wayne State University, College of Liberal Arts, Detroit 1, Michigan. *Assoc. Prof. Barbara Jewett, O.T.R., Chairman, O.T. Dept., Rehabilitation Institute, 261 Brady St.*
- Western Michigan University, Kalamazoo 45, Michigan. *Assoc. Prof. Rosalia Kiss, O.T.R., Head, O.T. Dept.*
- Wisconsin, University of, School of Medicine, 1300 University Ave., Madison 6, Wis. *Asst. Prof. Caroline G. Thompson, O.T.R., Director of O.T.*
- Awaiting accreditation:*
- Indiana University, Medical Center, 1100 West Michigan Street, Indianapolis 7, Ind. *Assoc. Prof. Patricia Laurencelle, O.T.R., Chairman, Dept. of O.T.*
- College of Medical Evangelists, School of Medicine, Department of Physical Medicine, 1720 Brooklyn Avenue, Los Angeles 33, California. *Miss Edwina Marshall, O.T.R., Educational Director, O.T. Curriculum.*
- Florida, University of, College of Health Related Services, Health Center, Gainesville, Florida. *Miss Alice C. Jantzen, O.T.R., Curriculum Chairman of O.T.*
- Washington, University of, School of Medicine, Department of Physical Medicine and Rehabilitation, BB-228 University Hospital, Seattle 5, Washington. *Miss Shirley Bowing, O.T.R., Head, Division of O.T.*

t

,

e

,

h

r,

R.,

R.,

n,

un,

rd,

ce,

R.,

T.

of.

us,

an,

son,

elle,

Los

zen,

rsity